SOUTH DEALER ISSUE
Pages 9-16

# Croplife®

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## mmonia Units ing Planned Northwest

### Columbia River, as Well as Phillips Pacific, to Build

SCO, WASH.—Two new nitro- lants proposed for the Tri-City near here may cost a total of 00,000, according to present

addition to the proposed plant Phillips Pacific Chemical Co. plife, July 18, page 1) expected st between $6 million and $15 n, the Columbia River Chemi- Co. is planning to construct a million fertilizer plant at At-

**he Columbia River Chemicals t would manufacture about tons of anhydrous ammonia y, according to present plans. plant would be built on land ed from the Walla Walla port rict about 10 miles southeast of co. Officials indicated that plete financial arrangements e not been worked out as yet.**

s reported earlier, the Phillips ific Co. expects to produce some tons daily of anhydrous ammonia n its new plant is completed. where the location will be has been announced, but officials in- ting the area looked at sites at la Walla, Pasco, Kennewick and atilla, Oregon, downstream from Nary dam.

he Phillips Pacific Chemical Co. is ed jointly by Phillips Petroleum p. and the Pacific Northwest eline Corp.

## Work Resumes at Two Plants After Strikes

Strikes against Heyden Chemical Corp. and American Agricultural Chemical Co. have been settled and work is being resumed. Heyden's plant at Garfield, N.J., went back into production Aug. 8 following termination of a strike by members of Local 566, United Gas, Chemical, Oil and Atomic Workers, CIO. They had been on strike since July 11.

The Bartow, Fla., plant of American Agricultural Chemical Co. also reopened on Aug. 8 after the company signed a two-year contract with the striking AFL Chemical Workers Union. Eight phosphate firms in the Bartow area were struck some 10 weeks ago because of a wage dispute.

## Distributor Price of D-D Reduced by Shell

NEW YORK—Shell Chemical Corp. has reduced the distributor price of its soil fumigant, D-D, from $1.20 per gallon to $1, according to Fred W. Hatch, manager of Shell's Agricultural Chemical Division. The reduction was announced on Aug. 9.

**The new price applies to D-D sold in 55-gal. drums when delivered by the carload or full truck load. A new 30-gal. container will be introduced later this year, Mr. Hatch said, and D-D will be sold at $1.05 a gallon in this container in carloads and full truck loads.**

An increase in production at Shell's plant at New Norco, La., made the price reduction possible, Mr. Hatch said.

### AERIAL SPRAYER DIES

GREENSBURG, KY.—W. L. Stanley, 28, of Hodgenville, died Aug. 6 when his spray plane struck a tree, nosed into a field and burned.

## ig Cotton Crop This Year ay Bring Acre Reduction n '56 Season, USDA Says

ASHINGTON, D.C.—The first of- l cotton crop estimate for 1955 indicating a yield of 12,728,000 es was a stunner to USDA officials now forecast that it may be nec- ry to cut back cotton acreage to low as 17 million acres for next r. Last week Croplife reported t early estimates indicated that cotton producers would probably able to maintain an 18 million e allotment for the 1956 crop.

**With unusual yields now estimat- all these earlier calculations st be thrown out the window attention focussed on forth- ming crop estimates.**

Higher yields as now indicated re- t improved efficiency in cotton ming through better and wider use of plant foods and adequate use of pesticides, USDA officials comment. Shoulder to shoulder with these two big brothers of the chemical industries, is the shifting pattern of cotton farming where larger units are replacing share cropping and tenant farm labor.

There may be little less land available for cotton acreage controls but the farm units as reflected by sharecroppers and tenants are diminishing with the result that larger units managed directly by the proprietor himself reflect mechanization and a more constructive attitude toward the purchase of plant foods and economic poisons.

**Commenting specifically on the greatly improved per acre yields of**

(Continued on page 20)

# FDA Says Firms Ask Too-High Tolerance For Pest Materials

By JOHN CIPPERLY
Croplife Washington Correspondent

**WASHINGTON, D.C.—As manufacturers of agricultural chemicals in the pesticide field make their start in petitioning Food and Drug Administration for residual tolerances when used on raw agricultural commodities a new field of procedure is now building up—one worthy of examination and attention on the part of the chemical companies.**

**Recently there have been applications made to FDA for pesticidal tolerances for certain products which have subsequently been withdrawn and amended.**

**FDA officials explain this condition as involving two separate situations which are becoming part of the building of procedural techniques in this matter of applications and petition for establishment of residual tolerances.**

The first of these situations is one in which a manufacturer has submitted an application along with required scientific data involving a permitted residual tolerance which on immediate examination by FDA pharmacologists, indicates a residual level beyond that which they would care to approve. When such a situation has arisen thus far, through consultation with the applicant, it has been suggested that a greatly reduced level of residual tolerance be requested and that the applicant resubmit his original proposals to a committee of scientists for further study and report to FDA.

**This approach in one instance has recently been taken but the committee thus far has not submitted its findings. It appears to FDA officials that these committees are moving slowly at the start as they, too, establish a procedural technique as a result of experience in this work. These committees have altogether a period of 60 days in which to examine data submitted by the applicant and if required,**

(Continued on page 20)

## Petitions for Two More Tolerances are Received by FDA

WASHINGTON, D.C.—Two petitions were received last week by Food and Drug Administration requesting establishment of residual tolerances for economic poisons used on a wide variety of fruits, vegetables and berries.

One of these applications was made by the Velsicol Corp., Chicago, Ill. It requests the extension of residual tolerances for chlordane, of 0.3 part per million on these additional raw agricultural commodities: alfalfa, clover, sweet clover, lespedeza, grass, sweet potatoes and meat.

In supporting this request for the extension of use of this product on these additional commodities, the applicant states that its petition is supported by an adaptation of methods described by Davidow in the "Journal of Official Agricultural Chemists," volume 33, pages 886-894, except for meat where the chlordane residue is determined by a method that measures total organic chlorine.

The other application is one from the Naugatuck Chemical Div. of U.S. Rubber Company, New York, in which it asks a residual tolerance of one part per million for its product aramite, a miticide. It asks that this tolerance level be accepted for this product when used on alfalfa, apples, blueberries, cantaloupe, celery, cucumbers, grapes, grapefruit, lemons, muskmelon, oranges, peaches, pears, plums, soybeans, sweet corn, tomatoes, watermelons, green beans, raspberries and strawberries.

### Inside You'll Find

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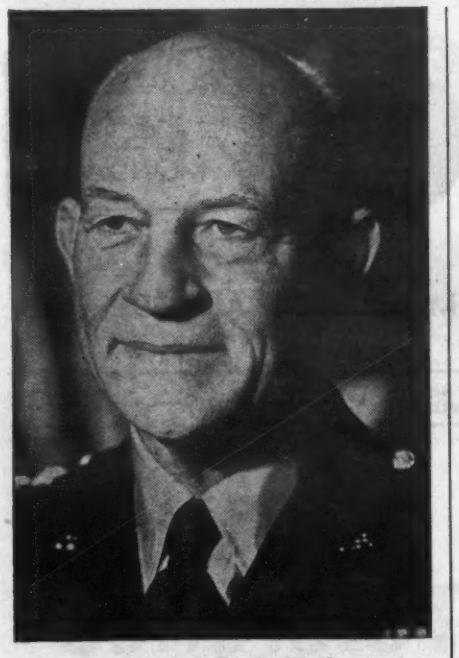
## Potash Deliveries Up 8% During First Six Months of 1955

WASHINGTON, D.C.—An increase of 8% in $K_2O$ deliveries during the first six months of 1955 has been reported by the American Potash Institute here. Some 2,056,052 tons of salts containing an equivalent of 1,213,430 tons $K_2O$ were delivered in North America, API says. These figures included deliveries by the seven major American potash producers and also imports for the first five months.

Deliveries of potash for agricultural use in Institute countries totaled 1,928,160 tons of salts with an equivalent of 1,134,605 tons $K_2O$, an increase of 5% in salts and $K_2O$

(Continued on page 20)



General J. E. Hull

# Gen. J. E. Hull Selected Head Of Association

WASHINGTON, D.C.—Gen. John E. Hull, U.S.A., (Ret.), former United States and UN commander-in-chief in the Far East, has been elected president of the Manufacturing Chemists' Association, Inc., it has been announced by John R. Hoover, MCA chairman of the board and president of B. F. Goodrich Chemical Company.

Gen. Hull will begin his new duties immediately with headquarters at the association's offices in Washington, D.C. He succeeds William C. Foster who resigned effective July 31.

**After 37 years' service Gen. Hull retired from the army on April 30, 1955, with the rank of full general. At that time he received a fourth Distinguished Service Medal. For the past two months he has served as vice-chairman of the Defense Department Committee to study the problem of American prisoners of war captured in Korea.**

Immediately prior to his retirement, Gen. Hull was commander-in-chief of the United Nations and Far East Commands, commanding general of the U.S. Army Forces, Far East, and governor of the Ryukyu Islands, posts he held from September, 1953, until his return to the U.S. in March, 1955.

A native of Greenfield, Ohio, Gen. Hull was graduated from Miami University (Oxford, Ohio) in 1917, served as a platoon and company commander with the 4th Infantry Division and participated in the Aisne-Marne, St. Mihiel and Meuse-Argonne offensives in World War I.

At the outbreak of World War II General Hull was assigned to War Plans Division of the War Department, General Staff, with the rank of colonel. In 1944, as a major-general, he became assistant chief of staff for operations on the War Department General Staff, with responsibility to the chief of staff for strategy, plans and operations of the army, and in 1945 as a member of the executive committee of the Research Board for National Security.

Following World War II he served as commanding general, U.S. Army, Middle Pacific, and commander, Hawaiian Department (1946).

### HORTICULTURAL FIELD DAY

MANHATTAN, KANSAS — The annual field day of the Kansas State College horticultural farm southwest of Manhattan will be August 17. Registration starts at 9:30 and the program will include a tour of the vegetable, fruit, ornamental, and flower plots. A lunch will be served at cost prices on the farm grounds.

## Louisiana Farm and Home Week Features Educational Tours

BATON ROUGE, LA.—Louisiana's Farm and Home Week was held at the State University here Aug. 8-11, with agronomists connected with the LSU Agricultural Extension Service, the LSU Agricultural Experiment Station, and the United States Department of Agriculture presenting late information on seed breeding, land preparation, fertilization, cultivation and disease and insect control.

**The program for Tuesday morning, Aug. 9, featured a motorcade visit to the Essen Lane and Perkins Road farms operated by the Agricultural Experiment Station to observe tests in production of legumes, forage crops, grasses and clovers, and cotton and corn.**

Cotton was the subject of the Tuesday afternoon program, featuring information on disease and insect control, with emphasis on the pink boll worm, and on cotton defoliation, mechanical harvesting, breeding of new varieties and cotton grading. The cotton program was continued on Wednesday afternoon.

A tour of the sugar cane experimental farm was made Aug. 10, to observe varieties, fertilizer treatments, cultivation and tests in rotation of sugar cane with other crops.

## 2 Acid Regeneration Plants on Stream at Locations in Texas

HOUSTON, TEXAS—Consolidated Chemical Industries of Houston has just placed on stream two sludge acid regeneration plants here, according to E. S. Rothrock, executive vice president of the firm. The plants cost about $8 million, he said.

**The plants, located at Baytown and Houston, Texas, were designed and constructed by Chemical Construction Corporation. They add 280,000 tons per year of regenerated sulfuric acid to the company's sulfuric acid business.**

A unique design feature of both plants is the utilization of the fuel value of the sludge itself. The sludge is decomposed in furnaces at elevated temperatures using only limited amounts of supplementary fuel.

## Protectants Effective On Stored Wheat

MANHATTAN, KANSAS — Protectants proved so successful in preventing damage to 1954 wheat by grain infesting insects that Kansas State College's 1955 tests with protectants have been designed to pinpoint most effective dosage levels, according to D. A. Wilbur, who is in charge of Kansas State's work with grain infesting insects.

Among the materials which proved particularly effective last year was an oil-free water-emulsifiable protectant whose toxic and repellent ingredients were pyrethrins synergized by piperonyl butoxide. Another effective product consisted of the same toxic ingredients, but instead of an emulsion in water the ingredients were dissolved in a fumigant known as ethylene tetrachloride. Both are liquids applied by spraying the grain as it pours out of the combine hopper.

Dosage levels for one of the materials are being tested in Montgomery County by approximately 25 farmer cooperators in 60 bins, while the other material is being checked in Allen County by about the same number of farmers and in the same number of bins.

The southeast Kansas counties were selected for the tests this year because wheat yields were reasonably favorable, with considerable grain being stored on the farm in wooden bins, Mr. Wilbur said.

## INTENSIFY WAR ON FLIES

**LEXINGTON, KY.—Horsemen in this area are becoming more fly conscious than usual, since the area's first confirmed case of equine infectious anemia, or "swamp fever" has been reported. Since flies and other insects carry and cause spread of this disease, the fight against them is being intensified. One Kentucky farm has been quarantined after the death of a mare as the result of this disease.**

## LION OIL REPORTS GAIN OF 29% OVER FIRST HALF OF 1954

EL DORADO, ARK.—Lion Oil Co. has reported an after-taxes income of $7,816,987, or $2.53 per share for the first six months of 1955. This represents a gain of 29% over the $6,067,300 and $1.96 per share in the first half of 1954. Sales and operating revenues increased to $58,694,131 from $50,819,710 in the same months of last year.

**According to a joint statement by T. M. Martin, president, and T. H. Barton, chairman of the board of directors, "the most important factor in increased earnings was high sales of chemical products in the first four months of the year.**

"However, an unseasonal late-spring freeze, which killed fruit and crops, eliminated consumption of large quantities of fertilizer and slowed down sales of agricultural chemicals earlier than normal."

## Dow Reports New Record in Sales

MIDLAND, MICH.—A new hi sales record of $470,742,000 was reported recently by the Dow Chemi Co. for its 1955 fiscal year ended M 31. The figure was 10% above t company's 1954 sales of $428 milli and 9% better than its previous b year, 1953.

From a slow start in its first qua ter, Dow reported a steady improv ment in sales throughout the year.

Dow's report to stockholders a showed other income, including di dends from associated compani amounting to $8,105,000, bringing total income for the year to $47 847,000.

Net earnings showed a 12% i provement at $37,414,000 as again $33,425,000 in 1954. These w equivalent to $1.64 and $1.42 p share of common stock outstanding the two years, respectively.

U.S. and Canadian income tax were up 47% from $24,400,000 to $3 900,000, equivalent to $1.58 per co mon share.

Dow paid $117,604,000 in wages a salaries and spent an additional $1 537,000 in indirect benefits. The t together accounted for 27¢ of t company's income dollar distributi Employment increased slightly 22,500.

Common stock dividends tota $22,655,000 compared with $22,507,0 in the previous year, while sha outstanding increased from 22,651,0 to 22,683,000. Shareholders at ye end numbered 54,400.

The company's sales revenue w attributed 58% to chemicals, 32 to plastics and 10% to magnesium

# Exploration Continues For Saskatoon Potash

SASKATOON, SASK.—Activity in the potash fields of this area of Canada is reported to be increasing in tempo with shafts being sunk to reach the deposits said to lie more than 3,000 feet below the surface.

In addition to exploratory work being undertaken presently by Potash Company of America and other firms, as reported previously, Duval Sulphur and Potash Co. has announced that it is starting operations at a location just north of Saskatoon.

**International Minerals and Chemical Corp. is also "interested" in the Saskatchewan potash field, and has six parcels, each of 100,000 acres, under permit on which development and exploratory work are being carried on by the Canadian Flint and Spar Co., Ltd., of Regina, a subsidiary of International.**

Various reports from authoritative sources indicate that huge depos of potash underlie a large area in province and furthermore, that material is of excellent quality.

To back up this evidence of g faith, the Canadian Pacific Railw has built a spur line to the mine of Potash Co. of America. Also, Saskatchewan Power Corp. plans build a new generating station Saskatoon, mainly to supply elec cal energy to the new PCA plant. present power plant in Saskatoon being expanded so that it will h a capacity of 108,000 kw by 1956 1957.

The Saskatoon community itsel reported to be enthused over developments and their import the future. Already millions of dol have been invested in potash devel ment and still larger sums are pected to be added to investme already made.

# *ACS Meeting Offers Technica Papers, Fertilizer Symposium*

WASHINGTON—Some 20 technical papers are scheduled to be presented when the American Chemical Society's division of fertilizer and soil chemistry meets in Minneapolis, Minn., Sept. 12-13. The event will mark the 128th meeting of the ACS.

Chairman of the Fertilizer and Soil Chemistry Division is George H. Serviss, GLF Soil-Building Service, Ithaca, N.Y., and secretary is Stacy B. Randle, New Jersey State Chemist, New Brunswick, N.J.

**According to the preliminary schedule issued by ACS, the program will include a symposium on fertilizer technology on the afternoon of Sept. 12; the presentation of papers in both morning a afternoon sessions on Sept. 13 an final session of technical pap on Wednesday morning Sept. 14.**

Mr. Serviss will preside over technological symposium on Mon with the following papers sched for presentation:

K. G. Clark, J. Y. Yee, V. L. Ga and F. O. Lundstom, "Prepara and Properties of Urea-Form: S bility Relationships and Nitrifica Characteristics."

**Charles F. Winchell and Jam M. O'Donnell, "Comparati Growth Response of a Compos Turf Mixture to a Synthetic a**

Natural Organic Source of Nitro-
Under Simulated Putting Green
nditions."

rthur M. Smith, "Fertilizer Prog-
and Problems."
aul Caldwell, "A New Nitric-
sphate Process — One Requiring
Other Acid or Sulfate," and A.
Slack, J. C. Driskell, H. K. Walt-
Jr., "Ammonium Phosphate-Ni-
e: Small Scale Preparation in a
ked Tower."

residing at Tuesday morning's
ion will be Dr. G. L. Bridger, Iowa
te College. The following authors
their papers are to be heard:
. V. Slack, J. C. Driskell and H.
Shaffer, Jr., "Preparation of Liquid
ed Fertilizers: Exploratory
dies."
. B. Hein, G. C. Hicks, J. L. Sil-
berg and Joseph G. Cummings,
me Effects of Formulation on
nulation of Mixed Fertilizers."

**Rikio Kumagi and John O. Har-
sty, "Relative Effectiveness of
oating Agents on Granular Mixed
rtilizers" and J. M. Stinson, M.
Striplin, Jr., N. A. Brown and
F. Seatz, "Ammonium Metaphos-
ate Fertilizer: Pilot Plant Pro-
ction and Greenhouse Tests."**

The afternoon session of Sept. 13
l include the following papers:
G. L. Bridger, Teodoro L. Horzella
l Kuang H. Lin, "Dicalcium Phos-
ate Fertilizer by Treatment of
sphate Rock With Mineral Acids
Monocalcium Phosphate."
D. R. Boylan and M. A. Larson,
rtilizer by Fusion of Phosphate
ck With Gypsum."
J. R. Archer and R. P. Thomas,
ater Soluble Phosphorus in Mixed
rtilizer."

**J. H. Caro and W. L. Hill, "De-
rmination of Surface Area of Di-
lcium Phosphate by Isotope Ex-
hange," and E. R. Holden and A.
Engle, "Boron Supply of a Soil,
Affected by Additions of Borax
d an Experimental Borosilicate
lass."**

Mr. Serviss will preside over the
l session of the division on Wed-
sday morning, Sept. 14. Scheduled
appear on this portion of the pro-
m are the following authors and
ir papers:
James M. O'Donnell, "The Effects
EDTA in Increasing the Efficiency
Insoluble Trace Element Mix-
es."
W. H. MacIntire, Mary A. Hardi-
, and Della R. McKenzie, "Span-
Moss and Limed Filter Papers as
dicators of Atmospheric Fluorides."
Clement D. Vellaire, "Potassium—
Alkali of Life."
A. A. Nikitin and Julia P. Goode,
elationships Between Major and
ace Elements in Plant Nutrition,"
d M. Peech, "Phosphate Equili-
um."

## ansas Lowers spection Fees n Pesticides

TOPEKA — The Kansas Board of
riculture has lowered inspection
s on pesticides sold in the state.
tion was taken by the board in its
arterly session under authority of
Kansas Statutes which provide
t the board may decrease fees
en returns exceed the amount
eded to administer the law.
Roy Freeland, board secretary, said
t the reduction is due to an in-
ased number of firms selling more
nds of chemicals in the state.
Fees will be reduced after Jan. 1,
56, from $15 per brand for the
t ten brands to $10 per brand for
first ten brands sold by a firm
the state. Brands sold by a firm
excess of the first 10 will continue
be registered at $5 per brand.
eeland added that registration fees
y be restored by the board as
eded.

## Nitrogen Increases Oat Yields in Iowa Experiments

AMES, IOWA — Nitrogen application over a 3-year period has resulted in an average increase of 3.3 bu. oats per acre at Ames. The yield increases were about the same whether 20, 40 or 60 lb. of nitrogen were applied. That's reported by the Agricultural Experiment Station of Iowa State College.

**In western Iowa, yields were increased 10.5 bu. The yields increased in proportion to the amounts of nitrogen applied.**

Over the same period, oat yields averaged about 5 bu. per acre more when oats were drilled in 7-inch rows than when they were drilled in 14-inch rows. However, increased tillering in the 14-inch rows almost compensated for the thinner plant populations, so the yield differences due to spacing were relatively small.

Stand counts and hay yield records were kept for three tests. Alfalfa stands were better under the 14-inch spaced oat rows in comparison with the 7-inch rows at Castana in western Iowa. In general, the effects of varying nitrogen rates, drill row spacings and oat varieties on the stand of the underseeded alfalfa or on yield of the succeeding hay crop were not pronounced or consistent.

### NEW PUBLICATION

BERKELEY, CAL.—Two publications dealing with chemical and other means of control of insect pests have been issued by the Division of Agricultural Sciences of the University of California for distribution. One of these is entitled "Controlling Melon Insects and Spider Mites," prepared by A. E. Michelbacher, W. W. Middlekauff, O. G. Bacon, and J. E. Swift. The other deals with "Grape Pests in California," and has been written by Leslie M. Smith and Eugene M. Stafford.

## 500 Radio Stations To Carry Fertilizer Talk by R. Coleman

WASHINGTON, D.C. — Listeners to some 500 radio stations around the country will hear Dr. Russell Coleman's voice via a recording he just completed on the subject of "The Efficient Use of Fertilizer."

**Dr. Coleman, executive vice president of the National Plant Food Institute, Washington, made the record for the Chicago Board of Trade for use this fall.**

Topics covered include the role of fertilizer in efficient agricultural production, the importance of soil testing, the plant food supply outlook, and the returns per dollar invested in fertilizer materials for greater yields.

With Dr. Coleman in preparing the recording for radio broadcasting, was Mel Galliart.

# DEFOLIATION - - - A MUST!!

*PENCO Defoliants mean better, more profitable cotton harvests!*

**You can recommend PENCO De-Fol-Ate** By hand or machine, a better grade of cotton of higher yield will result with PENCO De-Fol-Ate — a magnesium chlorate-type defoliant! It's the leader, dependable, proven commercially on hundreds of thousands of acres.

**PENCO De-Fol-Ate . . .** dissolves quickly in water . . . saves time. Not acutely toxic or unpleasant to handle. Increases picking efficiency . . . causes bolls to open more uniformly. PENCO De-Fol-Ate . . . is available in convenient 50 lb. bags.

**PENCO Endothal® Harvest Aid . . .** Another quality PENCO product, proven to be a highly efficient defoliant under favorable plant and weather conditions. In certain areas, you will want to double check the advantages of this product. PENCO Endothal Harvest Aid, a liquid easily mixed with water, is available in five gallon cans and 54 gallon drums.

*Service bulletins on these products are available on request.*

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Portland, Ore. • Wenatchee, Yakima, Wash.
Los Angeles, Berkeley, Calif.

**Pennsalt Chemicals**

# INSECT, PLANT DISEASE NOTES

## Leafhopper Damage Mounts in Maryland

COLLEGE PARK, MD.—Leafhopper damage is evident in fields where growth was slow and there has been no cutting since early June. Leafhoppers are likely to spread from this to adjoining green fields.

**Fall armyworms are damaging late corn from Calvert County to Carroll and on the eastern shore. This voracious pest will feed on opening leaves of young corn and eventually in the ears from now until frost. It also feeds heavily on grasses.**

Corn earworm has been reported as heavy in Montgomery County. Successful earworm sprays depend on the use of high clearance machines that will apply spray directly to the silks when silking starts.

Damage from potato leafhopper to snap and lima beans in all sections has been reported. Earworms may also attack beans as early corn matures and becomes unattractive to earworm moths.

Soybeans on the Eastern Shore are infested with spider mites (probably the strawberry spider mite) again this year. The mites are working into the fields from the edges. Control measures should not be delayed.

Tomato russet mite is infesting fields on the eastern shore. As in preceding years, fields that have been sprayed for beetles and hornworms do not have russet mites.

Hornworms and light infestations of aphids were found in Calvert County tobacco fields and mimosa trees from Montgomery County southward show heavy webworm injury. —Theo. L. Bissell and Wallace C. Harding.

## Indiana Orchards Hit By Varied Fruit Insects

VINCENNES, IND.—Control of codling moth and orchard mites in Indiana continues to be the principal problems for apple growers to be concerned about, although in a few instances red-banded leaf roller larvae are also numerous enough so that control measures are needed.

**Peak activity for second brood codling moth larvae has passed but enough new entries can be found to warrant continued cover sprays. This condition will likely continue up to the time third brood larvae appear unless cooler temperatures occur.**

Tetranychus species (two-spotted) mites are building-up in a few orchards. However, in most orchards mites are well controlled. Foliage generally appears in a greener condition at this time than since 1951.—D. W. Hamilton.

## Severe Mite Damage Reported in Colorado

FT. COLLINS, COLO.—Moderate to severe mite damage in field crops is reported from all sections of Colorado. Dr. L. B. Daniels, committee chairman and chief entomologist for the Colorado A&M College Experiment Station, notes that application of mite killing chemicals has produced only erratic results. He suggests that farmers double check with county agents on control measures.

Damaging numbers of Mexican bean beetle have developed in the state's green bean fields, and a relatively small potato acreage in the Arkansas Valley appears doomed this year because of severe potato psyllid injury. Little or no control has been applied, according to the report, although good psyllid control on tomatoes is being obtained in the same area. In northern Colorado, the Greeley-Gilcrest area has reported moderate and increasing psyllid numbers on potatoes and tomatoes.

Surveys in Otero, Bent, Pueblo and Prowers counties show an increase in incidence of western yellow blight in tomatoes. The same four counties and Crowley County have shown a wide distribution of yellow clover aphid in all alfalfa fields. Close watch is being kept on this particular problem, which could become very serious.

**Rio Grande County has reported damaging numbers of Mormon cricket in 1,800 acres, a problem accentuated by the presence at the same time of considerable numbers of grasshoppers. Areas treated earlier for Mormon cricket in Moffat County are reported under control now.**

Excessive fly breeding is reported in industrial areas, particularly around fertilizer plants handling waste from packing plants. Insecticides, including malathion treatments, are being used and are giving control.

A number of towns and cities have started fly and mosquito control programs in the past few weeks with good success, Dr. Daniels notes. Both aerial and ground applications of insecticides have aided in this control.

## Michigan Apple Growers Fight Leaf Roller

EAST LANSING, MICH.—Michigan apple growers are reporting lots of trouble from the second brood of the red-banded leaf roller.

Ray Hutson, head of the Michigan State University entomology department, reports the bug is resistant to DDT. Fruit growers formerly used arsenical sprays early in the season with good results in controlling the leaf roller.

**Mr. Hutson says that an infestation of the pest can make much of the apple crop unsalable if it is not controlled.**

The larva seals the rolled leaves to the apples and feeds on the fruit, making an irregular scar on the apples.

## Grasshoppers Continue to Threaten in Kansas

MANHATTAN, KAN.—The midsummer adult grasshopper survey began in Kansas this past week. Population counts in western and northwestern counties ranged from non-economic to severe. In general, counts were recorded light to threatening; however, there were a few localized severe infestations in some alfalfa fields.

**Counts in fence rows and roadside ditches along wheat stubble and summer fallow acreages ranged from six to 30 grasshoppers per square yard. The major species were as follows: Lesser migratory grasshopper, red-legged grasshopper, differential grasshopper, two-lined grasshopper, and the thistle grasshopper. Light to threatening populations were also found at some of the rangeland stops. Counts ranged from three to eight grasshoppers per square yard.**

Non-economic to light infestations of yellow clover aphids were found in all alfalfa fields that were surveyed in the following northwest Kansas counties: Norton, Decatur, Rawlins, Cheyenne, Sherman, Thomas, Sheridan, Graham and Rooks. Counts ranged from five to 70 aphids per sweep. Yellow clover aphids were also collected from white sweet clover in northwest Decatur County.

One non-economic infestation of pea aphids was found in an alfalfa field at St. Francis, Cheyenne County. Counts averaged about 10 aphids per sweep.

A few false wireworm beetles were observed in fields of Sherman, Thomas, Sheridan, Graham, Rooks, Osborne and Mitchell counties. Heaviest infestations were found in eastern Mitchell County where counts in roadside ditches averaged about two beetles per square yard.

No European corn borer infestations were found in corn fields of northwest Kansas. There are very few corn fields in this area of the state; however, examination of those fields where found failed to produce any evidence of corn borer activity. —David L. Matthew, Jr.

## North Carolina Fights Boll Weevil Losses

RALEIGH, N.C.—The boll weevil threat to North Carolina's cotton crop is serious, especially in the central and upper Piedmont areas. The second brood weevils are migrating, threatening all fields.

Bollworms do not constitute a general threat but red spiders continue to build up in many fields. They are not a threat, however, on a statewide basis, state entomologists report.

**Bacterial blight has been showing up rather severely in many fields this year. All stages of the disease have been observed including angular leaf spot, vein blight, dead arm, and others. This means that boll infections and rots will be present in a large number of fields.**

Considerable cotton defoliation will be necessary this year.

## Weevil Infestations Noted in South Carolina

CLEMSON, S.C.—Highlights of the insect situation in South Carolina are outlined as follows: Extremely heavy weevil infestations were noted in the Coastal Plain area. Initially light infestations of Piedmont have now reached danger point.

Extremely rank growth of cotton plant in Coastal area along with rain and cloudy weather are conducive to boll rots, and heavy flights of bollworm moths at Florence and heavy egg deposition on cotton terminals at Blackville were seen.

Serious diplodia ear rot of corn and barrenness of scattered corn plants were noted. Bud worms (corn earworm and fall armyworm) can be expected to damage corn for the remainder of the season.

Downy mildew of cucurbits was noted in Piedmont. All fall cantaloupes should now receive fungicide-insecticide applications, it was advised.

Tomato leaf spots increased in Piedmont and with bollworm moth flight expected, tomato fruit worm, and late blight threat, all fall tomatoes should receive fungicide-insecticide applications.

The malcondition of soybeans is thought to be linked with variety rather than soil deficiency. Lesser cornstalk borer complaints were spotted. Flea complaints continued. Stored grain insect damage continues to mount. Fumigation is now a must.

## Bollworm Heavy in New Mexico Areas

STATE COLLEGE, N.M.—Cotton bollworm (Heliothis armigera) infestations are very heavy in cotton in Chaves County. Most growers are taking steps to control this full scale outbreak. Bollworms are present in most fields in Quay, Curry, and Roosevelt counties, but damage is light and predators seem to be giving good control so far.

A few bollworm eggs were found in Sierra County. Infestations in Dona Ana County are still on the border line with a few damaging infestations spotty throughout the county.

Lygus bugs are building up again in cotton fields adjacent to alfalfa which is being cut in Dona Ana County. Lygus bugs are light in cotton fields in Quay, Curry, Roosevelt, Chaves, and Sierra counties.

Cotton flea hopper nymphs numbered 20 to 25 per 100 sweeps in one 80 acre field checked in Roosevelt County. Fleahopper populations in Quay, Curry, Chaves, Sierra and Dona Ana counties remain light.

**Cotton aphids are very heavy on cotton in spots throughout a 40-acre field in Roosevelt County. Lady beetles are also present in large numbers but didn't seem to be controlling the aphids.**

Cotton leafworms are light in cotton in Sierra County. One larva was found in one field and four larvae in another cotton field.

Yellow clover aphids are on an increase in alfalfa in Dona Ana and Sierra counties. No apparent damage has been reported. In Torrance County some alfalfa fields show severe damage to lower leaves, but very few yellow clover aphids are present.

**Pea aphids are very abundant in alfalfa in Torrance, Santa Fe and Colfax counties.**

Grain aphids are reported on barley in Colfax County.

Corn leaf aphids were very heavy on 40 acres of broom corn in Quay County. The grower used a malathion spray with very good results. —John Durkin.

## Boll Weevil Plagues Mississippi Farmers

STATE COLLEGE, MISS.—Cotton farmers in most areas of Mississippi are poisoning on a stepped up schedule to prevent excessive boll weevil damage, according to agricultural extension service county agents.

**In most areas, the agents reported the cotton as continuing to fruit well; however, insects are becoming a bigger problem.**

In Walthall County boll weevil and bollworm infestations were light but increased insect damage is expected.

One observer cautioned that the insect situation is not normal and normal insect control mehods will not prevent excessive damage. A stepped up interval of three to four days between poisonings and increased amounts of technical material in the insecticide mixture were recommended.

Boll weevil infestations are "spotted" and farmers are dusting cotton regularly for control.

Rank growth of cotton and increased rains have slowed cotton poisoning in Forrest County and resulted in increased boll weevil activity, according to N. S. Hand county agent at Hattiesburg.

## Grasshopper Damage Mounts in Missouri

COLUMBIA, MO. — Grasshopper damage has picked up considerably during the past 10 days and will undoubtedly continue to increase as long as the hot and dry conditions hold.

**Of the four main kinds of hoppers in Missouri, only two have a second generation. The hatch for the second generation on these two—the red-legged and the Mexican hoppers—is now largely over. The great bulk of small hoppers now being seen is of these two species.**

There is only one generation a year on the two larger kinds of hoppers—the large yellow differential and the large two-striped hopper. At the present time, the two-striped

nning its egg laying, and in the hern part of the state, will begin isappear during the next few s. The differential hoppers are largely adults, although because delayed hatch on some of the there are still a good many im- re individuals mixed in with adults. The big problem now is seeded crops.

e only way to adequately protect seedings is to get rid of hoppers in fields and pastures adjoining e fields to be fall seeded. It is st impossible to stop hoppers feeding on fall-sown crops after crops begin to come up.

lister beetles are becoming a ter problem and numerous web- ms can still be found in alfalfa. irling Kyd and George W. mas.

### Leaf Beetle ief Delaware Insect

EWARK, DEL.—Northern Dela- e communities show great con- over the elm leaf beetle. Since y July the new brood of adults been emerging in numbers even ter than those of May.

rom now until late fall, it will be narily a household rather than a le tree pest, causing considerable oyance by invading living quar- and crawling on windows, les, curtains, furniture, floor, etc.

he spraying of elms, to reduce the le population, is still recom- ded.

**The strawberry spider mite on ybeans is serious in the lower t of Kent County and through- Sussex and is especially abun- nt in the Bridgeville area. In- ted leaves have first a speckled earance; then, turn yellow; and, ally, drop off. This species is sent also on lima beans in the ughter Beach section and, with two-spotted spider mite, near orgetown.**

rasshoppers (three kinds) are valent from Cheswold southward. ssom-end rot on tomatoes is gen- ly common.

he first tomato russet mite infes- on in 1955 was discovered in a cre field near Hartly.—L. A. rns and J. W. Heuberger.

### real, Forage Insects ted in Florida

AINESVILLE, FLA. — Florida al and forage insects noted in ous areas include the velvetbean rpillar, the red-legged grasshop- corn earworm, white-fringed le and yellow-headed leafhopper.

ruit insects found include the tory horned devil and Japanese tle. A scale in the adult stage sed severe infestation on four ocarpus plants out of six exam- . Soft brown scale in all stages sed severe infestation on the stem standing cypress in Indian River nty.—H. A. Denmark.

### rn Borer Threat rious in Illinois

RBANA, ILL.—Illinois entomolo- s report that the corn borer out- k for the northern half of the e is black. Moth flight is usually vy and egg laying is reaching a k this week. Indications point to rolonged period of egg laying ex- ding into September. Damage may the most severe ever experienced Illinois. Stalk breakage and ear pping may be severe.

**With egg mass counts running 50 100 per 100 plants and even as gh as 500 in some fields, and still re to come, it appears that at st one application of insecticide uld pay dividends on most of the rn grown north of Highway 136. me of the late-maturing fields y easily justify two treatments.**

While there is considerable egg ng in some of the most advanced fields that produced the first generation borers, it is much higher in the later maturing fields and those at or just past the tassel stage are most vulnerable.

Canners of sweet corn are facing a difficult and continuous fight, too. The sweet corn crop will need protection until egg laying ends, or until the crop is 10 days from harvest.

Grasshoppers are still present in disturbing numbers in many localities. For the most part they are still concentrated along borders of fields in fencerows and similar areas, but they are rapidly moving into the first few rows of corn and soybeans.

### Grasshoppers Infest Minnesota Fields

ST. PAUL, MINN.—Many parts of Minnesota are heavily infested with grasshoppers. Where alfalfa is being cut, populations are moving into soybeans. In northwestern Minnesota 25% of the alfalfa in some fields has been destroyed.

Fields damaged by the northern corn rootworm have been spotted. European corn borer moth emergence is rapidly picking up. Apple maggots continue to emerge in all areas.

### Armyworms Found in Virginia Corn Fields

BLACKSBURG, VA.—This year's first fall armyworm outbreak has been reported in Virginia.

Arthur P. Morris, associate entomologist at Virginia Polytechnic Institute, says the first damage was in Goochland County corn fields.

If worms are found damaging crops, the species should be definitely identified before a control is applied. Fall armyworms and corn earworms are easily confused, officials warned.

Lesser cornstalk borers are damaging soybeans in several counties, and also may be damaging peanuts in the Tidewater area.

**Potato leaf hopper damage is showing up on alfalfa. Tobacco flea beetle and hornworm infestations are increasing in some of the flue-cured tobacco counties. Controls may be needed.**

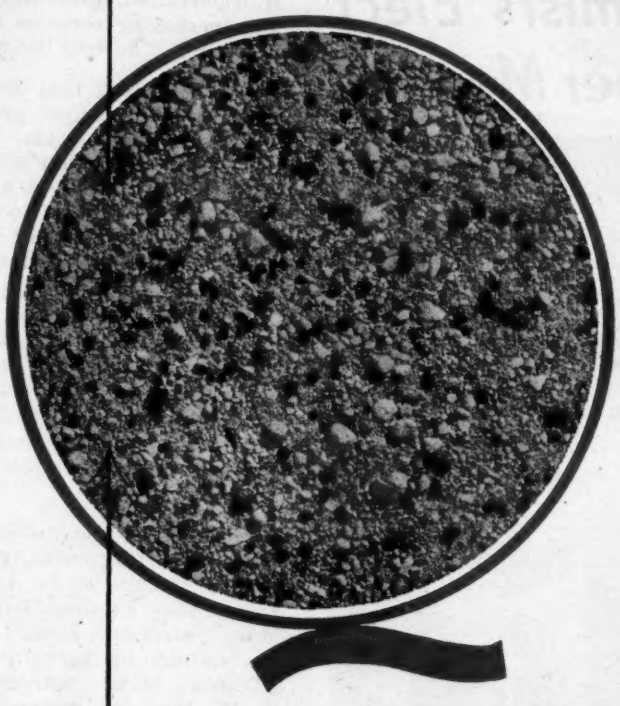
Mexican bean beetles, spider mites and potato leaf hoppers are damaging plantings of garden beans, and some commercial bean plantings. Spider mites are causing injury to tomatoes.

Pickle worms and fall armyworms have appeared in the Eastern truck area, and will do severe damage if not promptly controlled.

### Hopper Damage Likely To Continue in Iowa

AMES, IOWA—Grasshopper damage, which will continue until frost, is still reported in many areas. Chemicals applied now can prevent

(Continued on page 20)

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NORFOLK, VIRGINIA · GRANITE CITY, ILLINOIS

**AT PENNSYLVANIA MEETING—Soils scientists joining in the 75th anniversary celebration of Penn State's famous Jordan Soil Fertility Plots, divided into groups to inspect current crops on the oldest extensive fertility plots in the western hemisphere. Here, one of the groups quizzes Dr. A. C. Richeron on his current experiments as the plots are inspected. Agronomists of the Northeast had their annual meeting in conjunction with the anniversary celebration.**

# Northeastern Agronomists Elect R. B. Alderfer at Summer Meeting

UNIVERSITY PARK, PA. — Dr. Russell B. Alderfer, head of the soils science department at Rutgers University, was elected president of the Northeastern Branch, American Society of Agronomy, at the annual summer meeting held here recently. He succeeds Dr. Sam R. Aldrich, of Cornell University, who was elected regional representative to the national board of directors.

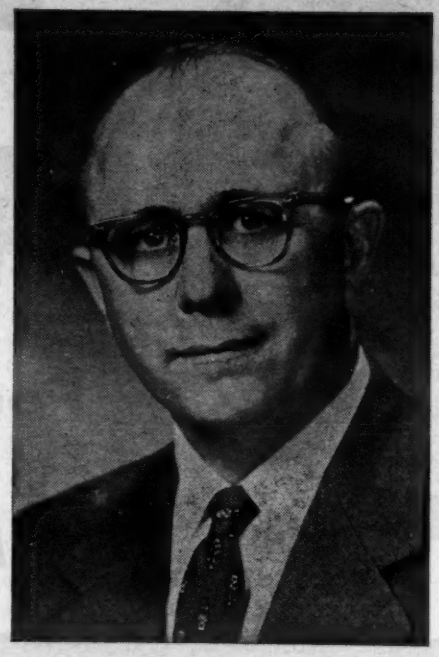
**Dr. Alderfer was a member of the Penn State agronomy faculty for many years before going to New Jersey a year ago to succeed Dr. Firman E. Bear as department head at Rutgers University.**

Dr. R. R. Robinson, member of the staff at the U.S. Pasture Research Laboratory here, was elected as vice president of the branch. He had been secretary-treasurer. New secretary-treasurer is Dr. T. S. Ronninger, of the crops faculty at the University of Maryland.

The agronomists voted to accept a joint invitation of the U.S. Agricultural Research Center at Beltsville, Md., and the University of Maryland for the 1956 meetings. They also agreed to include technical papers on future annual meetings, starting with the 1956 meetings. Previously, the Northeast Branch used field tours and similar outdoor programs for the main portion of the annual sessions, over and above the formal business meeting.

**Dr. W. I. Myers, Dean of the College of Agriculture, Cornell University, Ithaca, N.Y., reviewed many of the factors which have contributed to the advancement of agriculture over the past years. "Some of the greatest advances in farm practice have been discovered by research," he said. "Experiments have shown how the use of well-planned rotations and chemical fertilizers would greatly increase the yield of crops and at the same time improve the productive capacity of the soil.**

"Equally important are the development of high-yielding, disease-resistant varieties of crops and the great strides made in the chemical control of pests. Vaccines for the control of poultry diseases, economical spray programs for controlling insect pests, plant diseases, and weeds, and many other improved practices developed here at this Experiment Station are increasing yields and reducing risks in farming. More productive varieties of forage crops and improved programs of grassland farming are reducing the costs of



**Russell B. Alderfer**

production of milk, to the benefit of both producers and consumers.

"Similar advances have been made in livestock production by artificial insemination and scientific breeding of dairy cattle, and by better feeding and disease control," he said.

"These far-reaching improvements in farm production have been made by farm families under the American system of free competitive enterprise with tractors, power machines, feeds, and chemicals provided by private business corporations. They have been made possible in large part by careful, painstaking, scientific research by hundreds of scientists in the agricultural experiment stations of Pennsylvania, other states, and the United States Department of Agriculture.

**"Despite their wide geographical separation, these experiment stations are not a series of isolated agencies each working independently, but a remarkable team of coordinated laboratories pursuing common objectives. Integration of their activities is obtained principally through their direct relations with the Office of Experiment Stations and through the informal intercourse of staff members in meetings and publications of scientific societies. Thus, unnecessary duplication is avoided without loss of individual initiative, and workers at each station are able to use the findings of their colleagues throughout the nation.**

"The agricultural experiment stations are usually considered as farm institutions to promote the welfare of farm people. Actually, they serve the welfare of consumers as well. This is both desirable and appropriate.

"Public funds devoted to agricultural research and education are a productive investment in better living rather than just an operating expense of government. There is ample evidence to prove that, in the aggregate, funds devoted to agricultural research make a high return on the investment. The most spectacular examples are provided by new varieties of hybrid corn which have added more than 20% to the average yield of this major crop in the United States. The value of this increased crop for a single year is many times the entire annual cost of operating all agricultural experiment stations."

**The Cornell Dean continued by discussing food marketing and distribution, emphasizing the fact that farmers themselves receive only 42 cents out of the consumers' food dollar. "The high costs of getting food from farmers to consumers are due not to inefficient marketing, but to the costs of transportation, processing, storage and increasing services desired by consumers," he told the group.**

He emphasized that the principal way to increase food production is through higher yields from land already in use. "Unproductive land and land not suited to machine operation will be unable to compete in crop production and will be used for pasture or reforested," the Dean predicted.

"American agriculture, like industry, is dynamic, not static," he concluded. "It is subject to constant change and we would be remiss if we did not maintain a constant search for improvements in all phases of food production and marketing."

**Presiding at the various sessions of the meeting were Dr. M. A. Farrell, director of the Agricultural Experiment Station, Pennsylvania State University; Dean L. E. Jackson, College of Agriculture, Pennsylvania State University; Dr. H. R. Albrecht, director of agricultural extension, Pennsylvania State University.**

The final two days of the meeting, July 27 and 28, consisted of visiting and inspecting various experimental plots including turf, corn, small grains, forage crops, tobacco research, corn breeding and fertilizer plots, subsoiling experiments and pasture renovation projects.

This year's meeting was held in conjunction with the 75th anniversary observance of Penn State's historic Jordan soil fertility plots, said to be the oldest extensive fertility plots on the continent.

## Bertram K. Denton Named to New Monsanto Overseas Post

ST. LOUIS—Bertram K. Denton, Bombay, India, has been named assistant to the general manager of Monsanto Chemical Company's Overseas Division by Marshall E. Young, company vice president and division general manager.

Mr. Denton, who will assume his new duties Oct. 1, has been managing director of Monsanto Chemicals of India Limited in Bombay since 1950, and a resident there since 1947. In the new position, he will be concerned with special projects in connection with possible new product applications and development in the various overseas Monsanto affiliates or subsidiaries.

He will be succeeded as managing director of the Indian subsidiary by G. V. Cox, who has been with the sales department of Monsanto Chemicals Limited in England.

## Course in Aerial Application to Be Offered in Texas

COLLEGE STATION, TEXAS— A six-week course in agricultur flying is scheduled to begin at Texa A&M College here on Oct. 31, th school has announced. The critic shortage of trained agricultural av ators acted as the impetus fo planning such a training course.

**The college will team with Civil Aeronautics Adm. and the Texas Aerial Applicators' Assn. to give the course. Flight training and classroom instruction will cover all phases of the aerial application business.**

Experienced pilots who have com mercial licenses and who have logge at least 500 hours of solo flight tim will be taught the fundamentals an peculiarities of aerial application o pesticides in the course, the colleg says.

### LUCK RIDES AGAIN

**GREENVILLE, MISS. — Althoug crop duster pilots carry no passen gers, lady luck was riding with tw of them recently when engine troubl caused forced landings. Hugh Miller landed his faltering plane o a residential street by gliding unde power lines, escaping without injur Only damage came from his win hitting a truck. Another duster, C. Ferguson, crash-landed his plan on a moving auto in an attempte highway landing. Both he and th car driver were scared, but onl slightly injured.**

## 30-Year Soil Fertility Tests Summarized In Kansas Bulletin

MANHATTAN, KANSAS — Thirt years of soil fertility experiments i southeastern Kansas are summarize in a new bulletin, "Soil Fertility a Columbus Experiment Field, 1924-54.

Dr. F. W. Smith, Floyd E. David son and V. H. Peterson are author of the publication. Dr. Smith is i charge of fertility studies for th Kansas Agricultural Experiment Sta tion, Mr. Davidson is superintenden of the Mound Valley branch experi ment station, and Mr. Peterson is graduate assistant at Kansas Stat College in Manhattan.

**The bulletin points out that al falfa yields over the 30-year period definitely indicate a lime deficiency in the soil. The crop responded well to phosphate and barnyard manure.**

Research also showed, among othe things, that in the Columbus area a least: Corn benefits from lime, barn yard manure and potash; flax benefit from legumes and barnyard manure wheat and oats benefit from lime phosphate and barnyard manure.

Yields of crops under good so management, using fertilizers an lime, increased the general produc tivity of the soil over the 30-yea period while yields from unfertilize plots indicate a general decline in so fertility.

### FARMS GET LARGER

BURLINGTON, VT. — Vermon farms have grown 12% larger in th past five years, according to D Thurston Adams, agricultural econ omist at the University of Vermon Windsor County led those wit farms getting larger in land area Farms in that county increased 22% Orange County showed a gain o 21% in average farm size. The av erage size is now 207.6 acres as com pared with 185.2 five years ago.

OMOLOGIST'S VIEWPOINT

# any Advantages Seen for rtilizer-Pesticides in ntrolling Soil Insects

writer has been interested in insects and their control for 10 years. From the beginning it apparent that there were two ent ways to develop this field. was the direct application of icides on or in the soil, either cast or banded along the rows ne means or another. Second, the application of an insecticide e seed.

**rect applications of insecticides he soil have been tested and en for the control of corn root- ms, wireworms and many other insects. Useful insecticides in- e aldrin, heptachlor, dieldrin, C, endrin, chlordane and lin- e. Insecticide-fertilizer mixtures as starter fertilizers have popular for rootworm control use low dosages are used, and xtra work or equipment is re- ed. Spray applications made ordinary farm sprayers appeal ther farmers, and some early indicate they may give con- for two years.**

e striking acceptance of soil in- cides, including insecticide-fer- mixtures, in three Corn Belt s is shown in Table 1. This de- ment is interpreted as evidence soil insecticides are effective and tical, and at the same time so pensive that farmers can con- them as a form of crop insur-

rect applications of the insecti- to the soil have the following ad- ages over the insecticide seed tments mentioned above:

The dosage level can be as high as needed for the particular pests present or anticipated.

The insecticide can be distributed in the soil, either broadcast or banded along the rows, so that both root-infesting and seed-feeding pests can be controlled.

The margin of safety between the effective level and the dosage that will injure the plants appears to be large for most, if not all, of our agronomic crops.

**lthough it does not seem en- ly logical, our results indicate t about a 1:2 ratio exists be- en the insecticide dosages re- red for band and broadcast ap- ations, respectively. In other rds, a half-pound banded along rows appears to give about the e results as a pound applied adcast and worked in.**

ixing insecticides with com- cial fertilizers creates certain lems. First, are such mixtures ? Fortunately, some of our best insecticides seem to be entirely patible with all common fertilizer edients—even after storage. econd, an extra ingredient is re- d and it is a poisonous material. necessitates careful handling of concentrated insecticide, and er labeling of the bagged mix-

ird, the finished product is, in t, a relatively expensive custom- e item that should not be used criminately.

urth, thorough mixing is essen-

**he fact that almost every fer- er company in Iowa offered in- icide-fertilizer mixtures for sale 1955 is a good indication that e industry problems have been are being solved.**

rmers like insecticide-fertilizer tures because they do an out-

## EDITOR'S NOTE

**The author of this article is Dr. John H. Lilly, Iowa State College entomologist, Ames, Iowa.**

v v

standing job. In the words of Jim Holbert of Funk Brothers Seed Co., "they're simply terrific." The nice part is that they do the job economically, often producing a fine profit, and the whole job is carried out without a single extra operation on the farmer's part. This, of course, assumes that the insecticide-fertilizer mixtures are factory-made.

The cleverest comment on the status of insecticide-fertilizer mixtures I know of is quoted from Dr. George Decker, to the effect that: "Whether we like it or not, there's going to be a shotgun wedding, and the farmer holds the shotgun. He isn't going to fertilize today and dust next week if he can do the two at once."

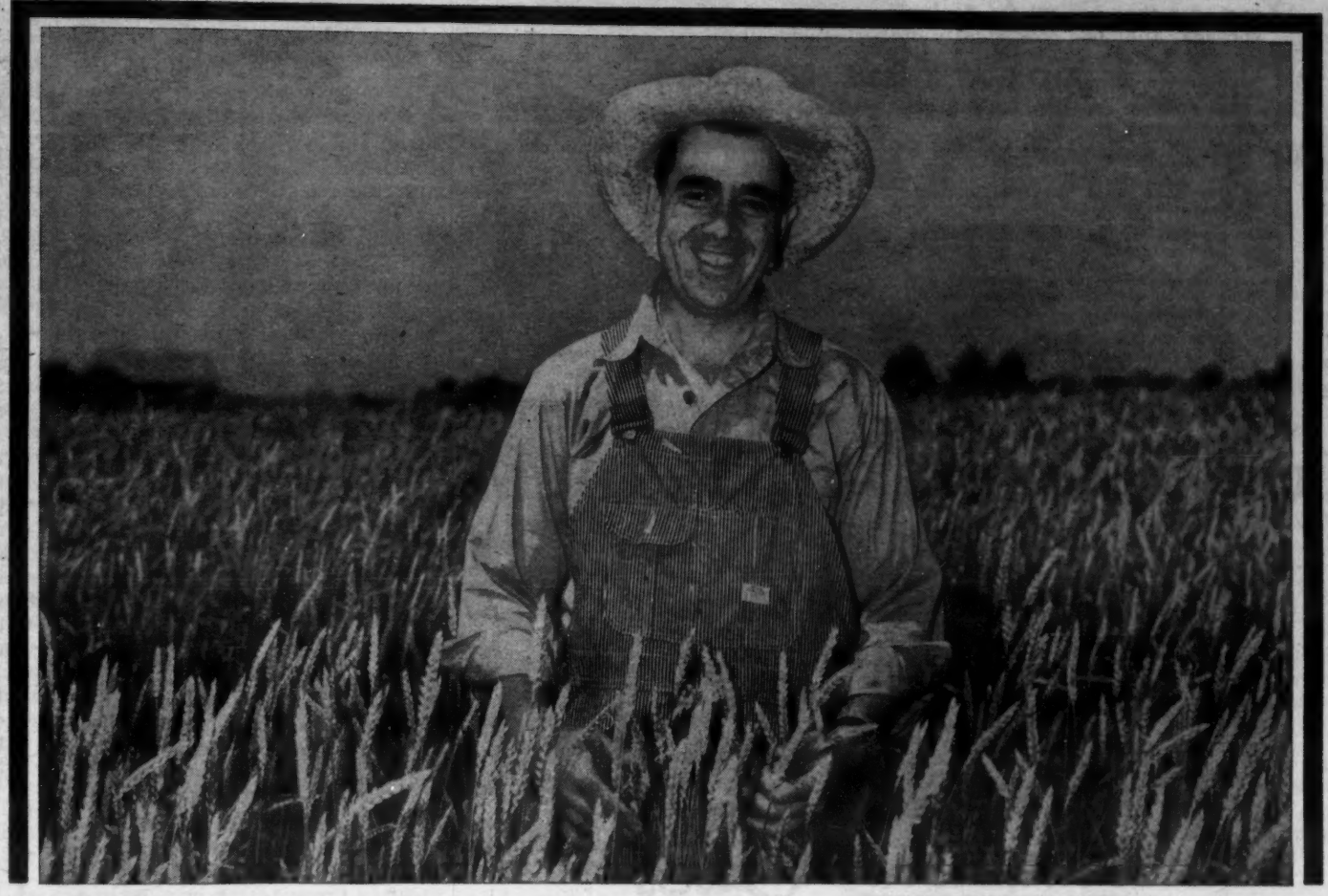
**Some fertilizer manufacturers like this new development very much. They visualize the possibility that in time a substantial part of the fertilizers sold will be used as insecticide carriers, to the mutual advantage of the producer and the consumer. This may sound visionary but evidence is fast piling up that this may be well within the range of practical possibility.**

Soil insecticides have physical and chemical properties which make it feasible to put them into various formulations. These are: (1) Emulsifiable concentrates, to be diluted in water and applied in spray form, either broadcast or banded along the rows. (2) Powdered dry or oily dust concentrates containing from 20 to 50% of the active insecticides which have been used in fertilizer mixtures. (3) Granular formulations, 30-60 mesh for example, for use in fertilizer mixes or direct applications with suitable equipment. (4) Solutions in low-viscosity solvents which permit them to be sprayed on fertilizer so as to impregnate it with a suitable level of insecticide.

This use of insecticides in solution in light solvents for the impregnation of pelleted fertilizers is a new but very important development. In fact, it may largely replace the granular insecticides which up to 1955 were widely used in the manufacture of insecticide-fertilizer mixtures. It has the advantages of being economical, easy to apply, and conducive to a good finished product.

**Up to this point the most common faults in the production of the**

(Continued on page 18)

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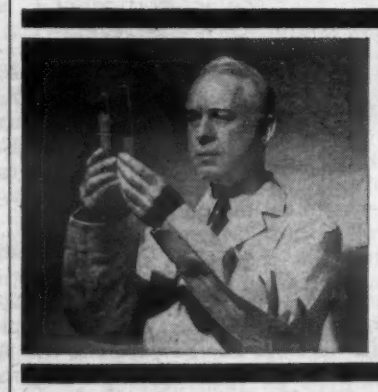

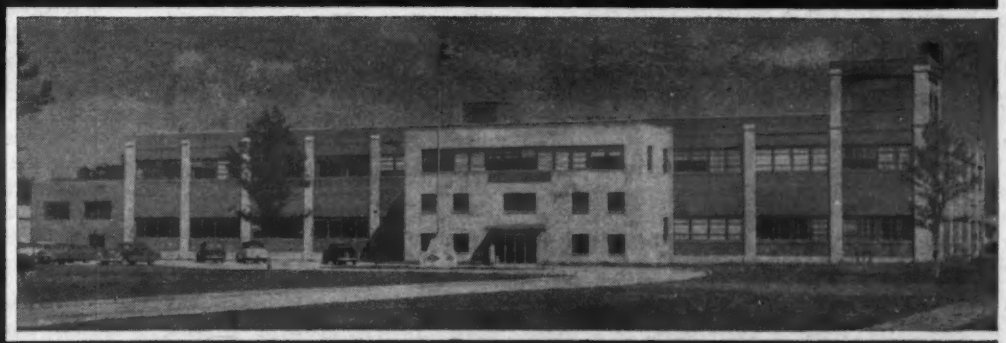

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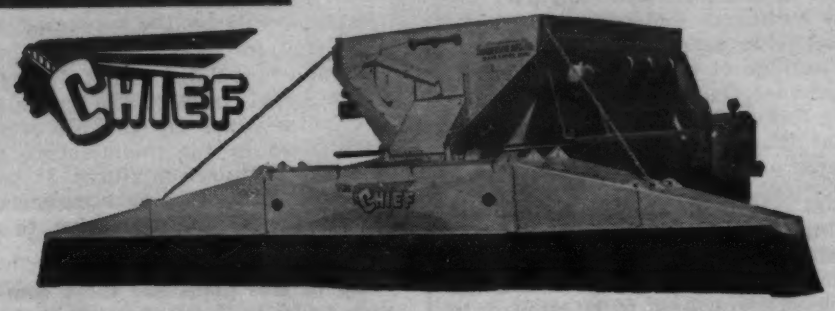


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5. Self unload direct into Chief Spreaders to keep them moving in the field. Avoid delays.
6. Spotting Transport at job frees truck tractor to pick up another Transport load. Like having one truck with several bodies.

All steel, welded construction, streamlined corrosion-resisting hopper, with rounded front, tarpaulin hooks and catwalk. Hydraulically operated rear feedgate opening controls material flow. Entire door can swing open to handle other materials. Hydraulically operated adjustable false floor reduces weight on conveyor belt. 15 H.P. Wisconsin Motor and extra-heavy-duty chain (with oiler) drive conveyor belt.

If you handle bulk material, it will pay you to investigate.

**Write for Circular and Prices.**

# HENDERSON

**MANUFACTURING CO., INC.**

**DEPT. 1, CEDAR RAPIDS, IOWA**


# Northeast Scientists Study Influence Of Environment on Herbicide Action

WASHINGTON — Cooperative research investigating the influence of environment on the effectiveness of herbicides has been initiated at several experiments in the Northeast region. The work is designed to study such things as the influence of soil and air temperature, moisture, light, soil texture, organic matter, soil acidity and soil fertility on herbicidal action.

Following are summaries of the work being conducted at the stations.

**Investigations at the West Virginia University Agricultural Experiment Station include a study of the fundamental relationships between soil characteristics such as texture, pH, and moisture content on the effectiveness of various herbicides as measured by germination and seedling vigor in the greenhouse, the rates of application of herbicides under controlled moisture and pH and the persistence of herbicidal activity under controlled moisture conditions.**

At the New Jersey station researchers are studying the movement and persistence in the soil of CMU. Dr. Richard J. Aldrich, assistant research specialist in farm crops at Rutgers, reports that the study is designed to study persistence of CMU in asparagus, its usefulness as a soil sterilant along ditch banks and industrial sites, how rapidly it travels downward and how deep it goes. The Rutgers researchers also are doing some work with weed control in potatoes.

Dr. Aldrich is supervising the project, and Donald T. Lillie is the student assigned to it.

**The title of the Rhode Island weed control project is "Factors Affecting the Control of Northern Nutgrass with Substituted Ureas, Alone, or in Combination With Other Herbicides." Objectives are:**

(1) To determine to what extent soil pH, fertility and moisture influence the time required by the substituted ureas to eradicate nutgrass.

(2) To find how these factors affect the duration of residual toxicity.

(3) To discover if other herbicides such as the phenyl mercurials will enhance the effectiveness of the substituted ureas.

Dr. Robert S. Bell, assistant professor, Agronomy Department, University of Rhode Island, project leader, said that the infestation of nutgrass in potato, corn and vegetable growing areas has expanded rapidly in the past few years.

"No economical and rapid method of control is available," he said. "Rhode Island farmers are asking the Agricultural Experiment Station for a quick economical method of chemical control. Potato growers estimate a 50% to 75% reduction in yields from heavy infestations of nutgrass."

**Principal material used in the test is Karmex W. The researchers also plan to test Karmex DW. Working with Dr. Bell in the project are Dr. T. E. Odland, Dr. M. E. Salomon and E. J. Bannister, Jr.**

The principal project at the University of Maryland has to do with the movement of carbamate herbicides in the soil as affected by variations in applied water, soil type and concentration of the herbicide. This work is being conducted primarily by Dr. Paul W. Santelmann.

The second phase has to do with the effect of carbamates on the metabolism of corn and soybeans. This work is being carried on primarily by John A. Meade.

**Dr. Stuart Dunn, plant physiologist, Department of Botany, University of New Hampshire, has issued a report on work done last year on the project "Light and Temperature Effects on Phyto toxity with Respect to Herbicides.**

In it he concludes that in gener two experiments are in agreeme that "yellow light increases adve effects of 2,4-D on dry weight p duction (of mustard plants) mo than white light or daylight."

Additional work shows that bl and pink light enhance the adve effect of 2,4-D even more than yell light, Dr. Dunn reports.

The work at the New Hampshi Station this year is designed to se basic information concerning t effects of light intensity in vario qualities of light on growth and d weight production of mustard, wit out the modifying effects of her cides.

Effects of other light qualities a in turn their intensities as th modify herbicidal effects, as well other concentrations of 2,4-D, will tested. Ultimately other plans a other herbicides, or perhaps differe formulations of 2,4-D will be use

Dr. Collins Veatch, associate agro omist at the West Virginia Universi Agricultural Experiment Station, r ports that the project in West V ginia is a study of the movement weed control chemicals in the soil influenced by rainfall and soil chara teristics. The present work is limit to a Dinitro compound known Premerge.

The Cornell University part of t project deals primarily with the so aspects, according to Dr. Robert Sweet, professor of vegetable cro at Cornell.

The problem is being approach from two different angles. A group the Department of Vegetable Crops primarily concerned with the diffe ential herbicidal activities of repr sentative herbicides under differe soil conditions. Researchers a studying 2,4-D, dinitros, substitut ureas, carbamates, and the crag-ty materials.

A second approach is underway the Agronomy Department, which concerned primarily with the micr biological and other fundamental s aspects.

**Personnel working on the Penn sylvania Agricultural Experimen Station project include Dr. S. M Raleigh, Department of Agronomy R. E. Patterson, Department o Agricultural Engineering, and Dr A. R. Grove, Department of Botan and Plant Pathology. Objective and procedures are as follows:**

(1) To determine the influence soil moisture on the effectiveness 2,4-D, CMU, Chloro I.P.C. and Dinit as a pre-emergence herbicide on co Four levels of moisture will be mai tained as well as possible if t weather permits.

(2) To determine the influence soil organic matter, porosity, and f tilizer level on the effectiveness 2,4-D on corn. Small plots will planted on land formerly in vario sod crops that have been grown two levels of fertility and three leve of moisture during the past thr years.

(3) To determine the influence moisture, competition, light and te perature on 2,4-D injury and we control. Corn will be planted ear regular, and late as well as thick a thin. Post-emergence applications 2,4-D will be made. A number of va eties will be shaded with aster clo

(4) To determine the influence nutrient concentration in the s Corn plants will be grown in gra culture in the greenhouse and out doors in ¼, ½, 2, and 4 times stan ard nutrient concentrations; 2,4 will be applied at two concentratio

(5) To determine the physiologic morphological, and other changes corn plants induced by treatment No. 4. Microscopic observations w be made on injured plants.

Special Retail Section

# Better Selling

Richer Fields for Dealers

A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW

## Suburban Location Helps Florida Firm Build Specialized Lawn Care Service

By AL. P. NELSON
Croplife Special Writer

A specialized lawn maintenance service is maintained by Turner Supply Co., Wilton Manor, near Fort Lauderdale, Fla.

Bill Turner and his brother, David, own Turner Supply, a firm selling insecticides, fertilizers, garden equipment, etc. Then, Bill Turner and Harry Taylor have a partnership in a lawn spraying service and headquarter it at Turner Supply Co.

Because Florida lawns are subjected to many diseases and insects such as Rhodes scale and chinch bugs, Mr. Turner and Mr. Taylor, operating a Myers Silver Cloud sprayer on a truck (F. E. Myers Co., Ashland, Ohio) offer homeowners a complete lawn protection service at from $10 to $15 per month, 10 months a year.

Under terms of such a service, the customer signs for a full year, and then the rest is up to Mr. Turner and Mr. Taylor. They'll visit the premises once a month, inspect the lawn, trees and shrubbery and spray them regularly.

They will also recommend fertilizer and plant nutrients for the lawns and shrubs, too, and thus are able to pick up many orders for such materials. And since the firm sells power mowers, hedge tools and related items, they frequently get orders for these articles.

**"This service is taking on very well," reports Mr. Turner. "The average homeowner is assured of steady lawn and shrub and tree protection, whether he occupies the home or not. The quoted price includes materials, and we usually line up many places to visit in a day on a spray basis. That's the only way we can make money on this deal."**

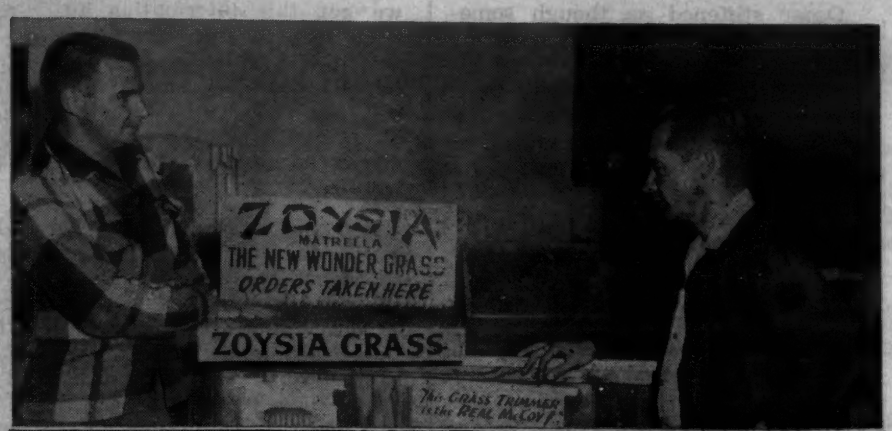
The average lawn is about 50 by 125 ft. and for this size the $10 per month charge is made. Higher prices are charged for larger lawns. The service is needed only for the 10 months of the year that plants grow very actively.

"Some of these lawn pests require heavy concentrations of insecticide," states Mr. Turner. "The average home owner does not know how to handle such materials safely, and so he welcomes us to do the job for him, and do it regularly when the need arises. Quite a few northerners who buy homes down here and leave them empty five months of the year from spring to fall, like our service for they then have green, healthy lawns instead of dead dried out ones when they come back."

**The Turner Supply Co. formerly had a downtown location in busy Fort Lauderdale, but parking became a problem for many customers. About two years ago, the firm made a move to the outskirts of the area where there is ample parking room and an area for outdoor display of some types of merchandise.**

The interior of the Turner store is an example of excellent display. One part of the store is given over to a showing of fertilizers, insecticides,

(Continued on page 12)



**FLORIDA DEALER—Bill Turner, co-owner of Turner Supply Co., Wilton Manor, Fla., is shown in the top photo explaining a new type of hardy grass to a customer. Below is a view of the firm's suburban location. The company moved from downtown Fort Lauderdale about two years ago.**

## SHOP TALK OVER THE COUNTER FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

The best way to tell a farmer about new farming practices seems to be through the mass media of communication—farm magazines, newspaper and radio programs, states a University of Wisconsin agricultural experiment station bulletin.

However, dealers, along with agricultural workers and other farmers are most important in getting the practices put into operation.

In a Wisconsin survey conducted in Sauk County, 170 farmers were asked the question, "Where did you first get information about the use of 2,4-D?"

First information about 2,4-D, came most frequently from farm magazines, with 28% of the farmers reporting this source. The other mass media—radio and newspapers—were mentioned by only 5% of the farmers. Fieldmen of the Agricultural Stabilization and Conservation offices also rated high for a source of first information, being mentioned by 17% of the farmers. This might be explained by the fact that ASC had been giving subsidy payments for weed control. County agents were mentioned by about 14% as a first source of information, and 7% mentioned other agricultural agencies like Soil Conservation Service, university, and farmers' institutes.

Lumped together, these agricultural agencies were the most frequent source of first information about 2,4-D weed control. Other farmers were mentioned by about 14% of the farmers as a source of first information.

### 2,4-D Information

Most information about 2,4-D was obtained from about the same sources

(Continued on page 12)

By RAYMOND ROSSON
County Agent, Washington County, Tenn.

What is the "warp" and "woof" of your trading area?

The "warp" of a fabric is its base, and the warp of your trading area would be the parallel threads so necessary in its weaving.

*On the farm and in the farm communities the warp is made up of what is produced and sold. In most farming areas it could be milk, beef, breeding cattle, hogs, sheep, poultry, eggs, hay, grain, vegetables, fruit or seed.*

"Woof" forms the pattern and holds the warp together. It runs perpendicular to the warp. It is the fabric of the cloth and without it the warp would be of no use.

*The "woof" of community life, whether it be in country or in town, is about the same. In the country, it is the church, school, 4-H Club, F.F.A., home demonstration club, P.T.A. or the organized community club.*

A farming community or a city community would be in bad shape without the "warp," and by the same token in just as bad shape if it had the "warp" and didn't have the "woof."

*Communities and towns have different patterns. We all should ask, "What pattern is our community taking?"*

Towns can be both "warp" and "woof" to the country. The market it affords the countryman for his produce is the "warp" and by encouraging the better things of life is the "woof." The country furnishes the "warp" to the city by purchasing consumer goods and it lends a hand in weaving the "woof" by training your people for a fuller life while they live on the farm, and when they move into town, they take their places in the social, educational and spiritual life of the town.

The "warp" without the "woof" is as bad as the "woof" without the "warp" and the country without the town is as bad as the town without the country. That's why all of us are interested.

### NEAT PROFIT

**Robert Grigsby of Perry County, Ky., sold 857 gal. strawberries for $1,072.20 from a half-acre. Then about 75 gal. were used at home or given away, he told Paul Keen, county agent. Expenses listed by Mr. Grigsby included picking, $50; baskets, $25; fertilizer, $35; plants, $25; labor, $30, and geese, $15. These left a net profit of $892.20. Adding the value of berries used at home or given away, the net was approximately $1,000, he figured.**

Doing Business With

# Oscar & Pat

When Oscar came back from lunch his sharp eye noticed a stack of bundled paper on Tillie's desk and a packet of stencils. He frowned and walked over to the desk and counted the packages—four.

"What in the world is all this paper for?" he asked suspiciously." And these stencils?"

"Mr. McGillicuddy is getting out a direct mailing on fertilizer," said the plump, nervous bookkeeper. "He told me to order four reams of paper as it was cheaper—and we were all out of stencils, too."

**"Direct mail advertising on fertilizer!" snapped rotund Oscar. "I thought I had talked him out of direct mail advertising while the radio program was on. And he promised to cut down on newspaper advertising, too."**

"This is something special, Mr. Schoenfeld. Pat's very excited about it."

"Yeah, well I'm excited about it, too—about how we are going to pay for it. Now what is this special advertising he wants to get out?"

The nervous bookkeeper swallowed hard. She hated to be the go-between in a case like this—with two partners pulling against each other. "Well, I don't think he wants you to see it before it's printed."

Oscar stiffened as though someone had slapped him. "Why not?" he demanded.

"Because he told me not to show it to you."

"He did!" Oscar's face was as pale as a sheet. "I'm in this business as a partner. My money is as good as his. I have to worry about the bills as much as he does. And he doesn't want me to see that ad copy."

Tillie was almost at the crying stage. "T-that's right."

"Hm!" Oscar paced back and forth. "Have you got the copy?"

The bookkeeper nodded miserably. "Yes, in my desk."

"Give it to me!"

Tillie's eyes welled with tears. She shook her head.

"I said GIVE IT TO ME!" Oscar roared angrily.

**Tillie shook her head. "I might as well quit, Mr. Schoenfeld. I don't know who's boss around here. Pat tells me to do one thing and you the other. I'm getting tired of it. I do the best I can. So I'm quitting." She dabbed her eyes, rose to her feet and headed for the ladies' room.**

"Tillie!" yelled Oscar. He knew she was an excellent bookkeeper, was conscientious and accurate and dependable. He knew she would be hard to replace—for the same money.

"Yes, Mr. Schoenfeld?"

"Don't quit. Think it over. I can't make you give me the copy, but I forbid you to mimeograph it. Tell that to McGillicuddy when he comes in."

Tillie stood indecisively for a moment, then went back to her desk. This was a way out for her. Oscar and Pat would have to fight it out.

About an hour later, Pat came in, whistling as usual. He saw the stacks of paper on Tillie's desk, and said, "Oh, have you had time to work on that direct mail job?"

"No, she hasn't," Oscar snapped. "I told her not to."

"You did? Why?"

"Because I don't favor spending money for direct mail advertising, and also you told Tillie not to show the copy to me. If I'm a partner, I want to know how my partner is spending our money."

Pat's face went pale, and he began counting to eight, as Nora told him to do when he had a quarrel with Oscar. "So that's it, eh? Yes, I told Tillie not to show the copy to you, because I knew if she did you would slash it up, cut it down and destroy the punch. This copy will sell fertilizer for us."

"Huh!" That was Oscar's only remark.

"I have gathered a lot of material from various agricultural college experiment stations on their experiments with fertilizer," Pat said. "I have briefed this material up. It deals with many crops, many different types of soils in various parts of the country. I am heading it 'Experiments in Fertilizers' and most of the reports show that the farmer who fertilizes according to recommendations really gets lots of returns."

"Is that information new?"

**"Some of it is," stated Pat. "If we get this information to our trade by Aug. 15, then they'll digest it and be softened up for our fall fertilization campaign which will begin about that time. This direct mail will get them thinking about the advances in the use of fertilizer."**

"And you are going to go on and on spending money for promotions and advertising without telling me?"

"I run the sales end, and you run the business end, Oscar. You don't ask me about all the things you do, either. I show you many of my ads when I have the chance. But this is something special I want to go through the way I planned it."

Tillie Mason felt her ulcer acting up as the men argued, so she swallowed an ulcer powder and tried to think of something pleasant.

Finally, Pat became very angry at Oscar's persistent sniping, and he said, "Oscar, if you really want to know, I think you kill an awful lot of time and waste money around this office, when you could be doing something more productive. You fiddle away a lot of time being extra careful, refiguring discounts, worrying about this and that, and sticking around the plant all the time. You won't even talk to and be nice to customers. Why—why we could hire a man to do what you do—at half the wage you're getting."

"Half the wage!" gasped Oscar.

**"Yes," growled Pat. "You should be out in the field like me—selling, handling customers, building good will. Then you'd be productive."**

"That's what you think!" snorted Oscar.

Pat nodded.

"Well, I think different," said Oscar acidly. "I got money to protect, and I can protect it best by sticking right here to see it isn't wasted. Let's leave it that way."

## Texas Seedsmen Hear of Control For Corn Earworm

COLLEGE STATION, TEXAS — Allan Bryant of Bryant Seed Farms at Corsicana was elected president of the Texas Hybrid Seed Corn Assn. during a recent meeting at Texas A&M College.

Emmitt Harper of Harper Seed Farms, Martindale, was elected vice president, and M. D. Lacy of the Texas Department of Agriculture, was reelected secretary-treasurer.

Directors of the organization include the officers and David Bagley of W. W. Bagley & Sons, Martindale; Ervil S. Fry, Asgrow Texas Co., San Antonio; F. B. Romberg of Holland, and Minter Womack of Ferris Watson Seed Co., Garland.

**During the meeting the seedsmen heard W. A. Douglas, U.S. Department of Agriculture entomologist in Mississippi, describe a machine-treatment method for controlling corn earworm. He said:**

"Take two pounds of technical DDT, emulsifiable (usually in a 25% solution); one gallon of mineral oil and enough water to make 25 gal. of the solution. This covers one acre.

"Use a power sprayer with two nozzles on each side of the row, concentrated in a 30-inch vertical area. Make three applications, three days apart, with the first applied just when you can see the first silks."

Mr. Douglas also spoke on soil insects which damage corn, and said, "We are very happy that farmers now are interested in insecticides as an insurance program. The earlier you get to the insects the better. Of course, an ideal way would be a seed treatment program."

### FFA CHAPTERS CITED

WASHINGTON — Four Future Farmers of America chapters in widely scattered parts of the country have named winners in the 1954-55 contest for outstanding leadership in cooperative activities conducted annually by the American Institute of Cooperation, J. K. Stern, president, has announced. The winners are Delmar (Del.) F.F.A. Chapter; South Dade F.F.A. Chapter, Homestead, Fla.; Winona (Minn.) F.F.A. Chapter, and South Cache F.F.A. Chapter, Hyrum, Utah.

### FIELD DAY

NEW HAVEN — The Connecticut Seed Trade Assn. will present a bronze historical marker to record that double-cross hybrid corn was first grown at Mt. Carmel in 1917, at the annual field day of the Connecticut Agricultural Experiment Station to be held Aug. 16. The marker will be presented by John T. Moss, Branford, president of the association. The field day this year honors Dr. Donald F. Jones, head of the genetics department, who this year completed 40 years on the station staff.

## 10 Southern States Participate in Anti-Roach Campaign

"It's no disgrace to have roaches, but it's a disgrace to keep them" is the underlying theme in the present ten-state anti-roach program in the South.

**This program is being conducted through the offices of state agricultural extension services with the approval of the U.S. Department of Agriculture. States participating in the program include Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Arkansas and Louisiana. The campaigns will be running through August in most cases.**

The extension services are utilizing a ten-minute color film titled "Goodbye, Mr. Roach" to help householders in the identification and control of roaches. A comprehensive flannelgraph presentation on the same subject is proving to be of great help to the home demonstration agents.

Cooperating with the participating states, Velsicol Corp., Chicago, has been encouraging insecticide formulators, distributors and dealers in the area to tie in with the campaign. Velsicol has made available to distributors and dealers a complete assortment of Chlordane merchandising aids for the campaign.

## Fertilizer Helps Texas Farmer Grow Two Crops a Year

MIDLAND, TEXAS—W. H. Yater, who owns a 120-acre irrigation farm, has been getting better use of his fields and wells by growing two crops a year. He says he not only makes more money, but the fertility of the soil is increasing year by year.

In the fall Mr. Yater plants a large field to barley and rye, and grazes cattle and hogs on it until spring. It is then planted to cotton while a third field is sowed to sudan grass for summer grazing. By using a three-way rotation, he manages to raise 100 hogs and 50 cattle each year and buys feed only for putting a finish on the animals.

**"I've seen my soil improve steadily the last two years," he said. "I apply all the cotton burrs available in the winter, and then use about 300 lb. of a nitrogen-phosphorus fertilizer.**

"The burrs increase the humus so that the soil takes water faster and remains cooler during the hot weather. The commercial gives the soil an added kick that is needed to make crops fruit out."

On one field Mr. Yater made three bales to the acre, which is far above the county average. With cotton allotments becoming more strict, he is getting a second cash crop out of his livestock. Also he gets use of the irrigation wells the year around but does not pump them hard at any time, since the crops grow at different times of the year.

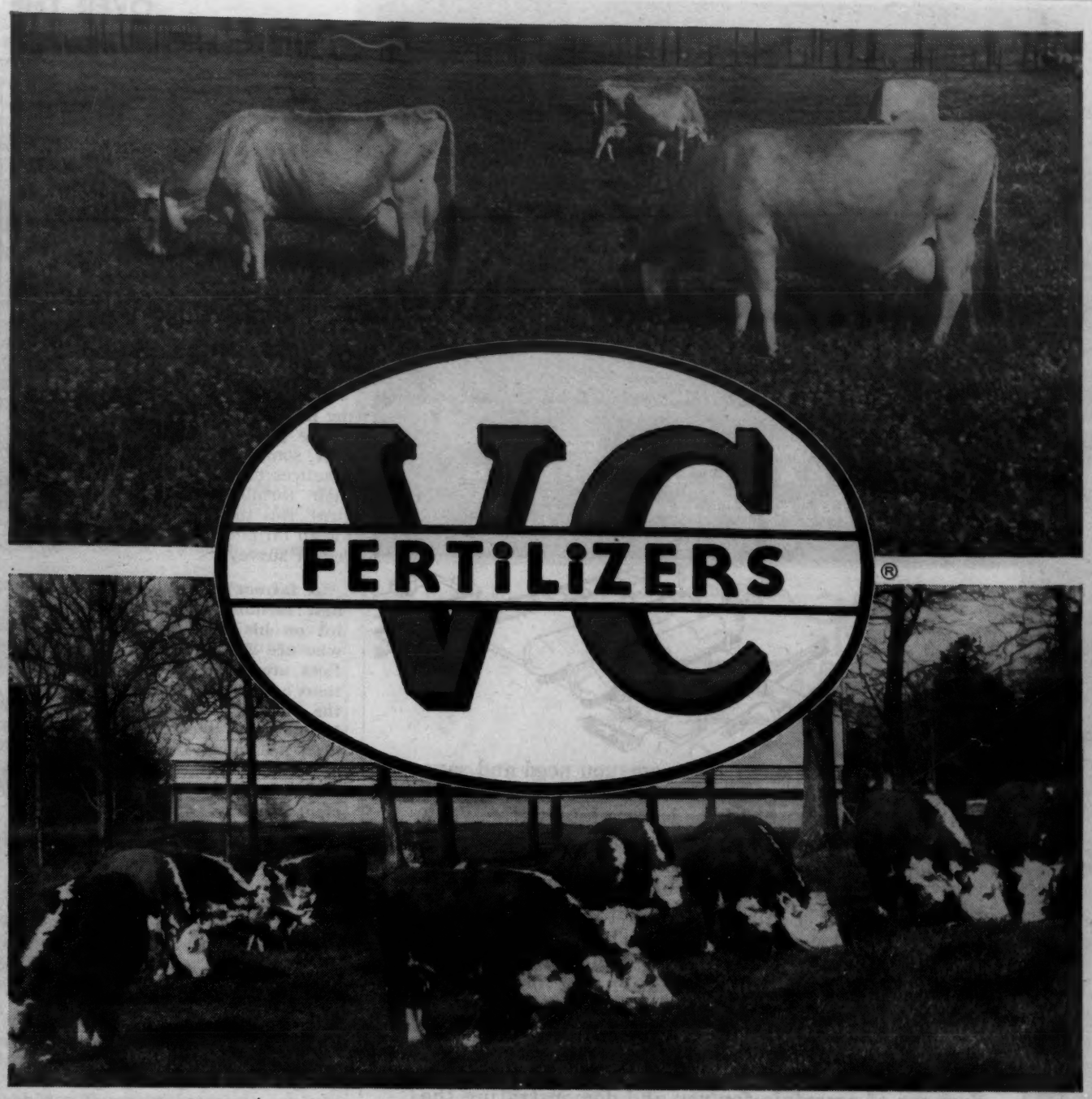
**"Too many farmers think soil conservation is something that costs money to apply," he said. "Actually you make a higher profit from it each year, and as the soil fertility increases, the yield becomes greater."**

"My plan of soil conservation includes crop rotation, adding cotton burrs and manure, using fertilizer and plenty of water. If a farmer will follow this plan, he can make more money on 100 acres than he can farming 200 haphazardly."

Boosting YOUR SALES

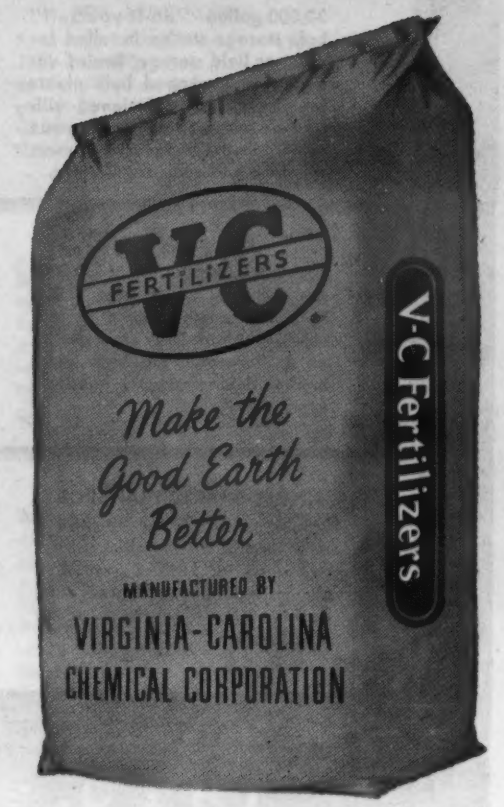
THIS AD

and others like it are appearing in leading farm publications read by YOUR customers




# Here's where you buy better milk and meat at lower cost

**Do you want extra gallons of high-quality milk or extra pounds of top-grade meat?** The best place to buy it at low cost is from your own pastures. Invest in more V-C Fertilizer for your pastures and apply it now. V-C Fertilizer and wise management help pastures to yield four to five times as much succulent, green, nutritious grazing, rich in proteins, minerals, vitamins and energy. Your cattle harvest this high-feed-value, appetizing roughage and convert it into extra income for you. You get more and better grazing and extra grazing days early and late...and you save labor and expensive barn feeding. Properly used on pastures, V-C Fertilizer produces extra meat and milk worth several times the cost of the fertilizer.




## See Your V-C® Dealer

**Famous for 60 years** for crop-producing power and easy-drilling quality, V-C Fertilizers are manufactured in various analyses so that there is a V-C Fertilizer for every crop on every soil. Each V-C Fertilizer is a rich, mellow blend of better plant foods, properly balanced to supply the needs of the crop for which it is recommended. Tell your V-C Dealer you want the right V-C Fertilizer for each crop you grow. See what a big difference these better fertilizers make in your yields and your profits!

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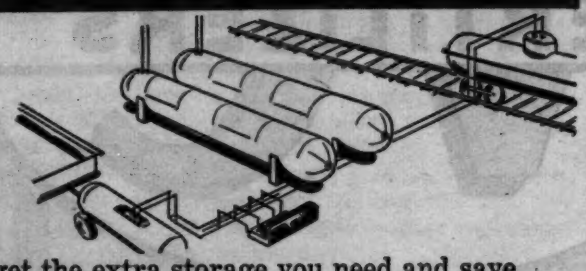
DO-IT-YOURSELF

SAVE UP TO 1/3

...on installation costs with BEAIRD'S packaged storage stations



NOW . . . get the extra storage you need and save money, too. Do-it-yourself with a Beaird packaged bulk storage plant shipped complete with every pump, valve, fitting and accessory you need to put it into operation. You buy nothing extra! And three to five-year financing may be arranged.

Preassembly at Beaird and easy-to-follow building plans make it easy for you to install the complete packaged plant with minimum field work and outside labor. Much of the installation may be made by your own employees. As further assurance of proper assembly, a Beaird field engineer supervises the entire installation, including unloading, placing tank on foundation and piping as well as unloading the first car of ammonia for you and demonstrating the plant operation to your employees.

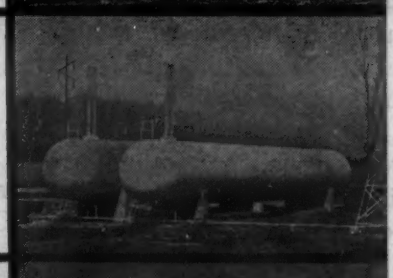
Before you build your bulk plant, see how much you may save by installing your own Beaird packaged storage station. *Write today or ask your Beaird representative for a quotation on your requirements.*

**SINGLE TANK**

30,000-gallon "do-it-yourself" bulk storage station installed for plant or field storage. Beaird do-it-yourself packaged bulk plants are individually designed with one or more tanks to fit your requirements, engineered to meet all state and code regulations.

**DOUBLE TANK**

Packaged installation of 30,000-gallon tanks. Other sizes: 2,000 to 30,000-gallon capacity. Identical bulk plants may be ordered on a "turn-key" job basis, with Beaird field engineers handling every detail.



**SINGLE-BARREL TRANSPORT**

Bigger payloads for dealers — new Beaird 6,165-gallon trailer transports for NH3. Designed to eliminate dead weight, transports deliver bonus payloads up to 1,000 gallons.

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BEAIRD

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## OVER THE COUNTER

(Continued from page 9)

as first information, but the number of farmers mentioning other farmers increased to 22%.

**In general, it was found that the mass media most frequently "notify" farmers about new practices developed by the agricultural experiment stations. Notification is followed by personal contact with agricultural experts, commercial dealers, and leading farmers before they are adopted.**

### Why New Practices

Why do farmers take up new farming practices?

One powerful reason seems to be that some farmers see these new practices as a means toward making their farming better or more efficient. But that isn't the main reason for all farmers, according to the Wisconsin survey.

**A farmer's tendency to take up new farming practices depends a lot on his aims in life. Farmers who are quick to adopt new practices are those whose main ambitions are to improve the farms and the buildings, increase the size of farm, have good equipment and high producing livestock, or raise more while keeping costs the same —all goals for better and more efficient farming.**

On the other hand, the farmers whose main goal is security—owning the farm free from debt—are less likely to adopt changes in farm practices, the survey says. These people are more concerned with security than with efficient farming.

The picture is about the same for goals and ambitions with respect to family and home life. The farmers that stated their goals in terms of "good living" were much more favorable toward taking up new farming practices. Those that stated their goals in terms of security for the family, or those that were unable to say what their goals are, generally were not farmers that took up new farming practices.

### Living More Secure

Innovations included in this study were: Milking machine, field baler, hay chopper, 2,4-D weed control, alfalfa brome seeding, contour stripping, grass silage, artificial insemination, residual fly spray, and electrical milk cooler. Also included were eight farming improvements—soil testing, use of 200 lb. or more fertilizer on hay and pasture seedings, nitrogen side-dressing of corn, keeping cows out of woodlots, cow testing, clipping udders, use of registered sires, and sale of grade A milk. The surveyors questioned the farmers on how many of these practices they had taken up, how many of certain practices they were in favor of, and what their main goals in life are.

**What do these results mean? Basically, the report says, they show that acceptance of improved farm practices isn't entirely a dollar-and-cents decision—that the family's goals in life play some part in the decision. Specifically, this means that it's very important to show the security-minded farmers how a new practice can help them attain that security. The farmer who constantly aims to increase his efficiency and to farm better is already receptive to changed practices.**

Tell the other farmers how a changed practice can make their living more secure—help them to pay off their debts, to earn a better living and to give their children a better opportunity—rather than about how efficient they can farm, the report suggests. This might well be the best way of convincing many farmers to put new practices to work, the report concludes.

## FLORIDA DEALER

(Continued from page 9)

fungicides and related items. There is a large display of this stock on sturdy counters. The fertilizers are mostly in small packages, as these sizes are preferred by many gardeners, although the larger bags are stockpiled, too.

On one sidewall, there is an excellent display of hedge clippers and similar tools on pegboard where they quickly catch the attention of browsing customers. Another wall section has a large display of hoes, rakes, shovels and other garden equipment. Because the average Florida resident spends many months outdoors, and has a long growing season, this means he invests considerable money in the proper equipment.

Another area of this interesting store has an excellent display of wrought iron and other decorative items which are in demand by homeowners for indoor and outdoor purposes. Some of these decorative items are mounted on the walls where they quickly catch the attention of customers.

Equipment such as hedge trimmers, wheelbarrows, power mowers, lawn edgers and other equipment are also shown many months of the year. The Turners sell a sizable volume of these power items, and their shop is equipped to handle repairs on them as well.

**"From this new and larger location, we are able to serve our customers much better," reports Bill Turner. "Because there are no parking worries customers stay longer in the store, inspect more displays and buy more merchandise.**

"We try to become well acquainted with all our customers and impress upon them that we are lawn and garden experts and will be glad to help them with those problems at any time. This type of service appeals, with the result that we have many steady customers."

The Turners do considerable direct mail advertising, and some newspaper advertising, factors which also help to make this firm better known throughout the entire area.

## Committee Assignments Named for Southern Control Officials

STARKVILLE, MISS.—Dr. M. P. Etheredge, Mississippi state chemist who recently was named president of the Association of Southern Feed & Fertilizer Control Officials, has announced committee appointments for 1955-56. They include:

Fertilizer committee—Bruce Cloaninger, South Carolina, chairman, Dr. J. F. Fudge, Texas, and L. C. Jacobs, Tennessee.

Pesticide Committee—Rodney Berry, Virginia, chairman, Clyde Bower, Oklahoma, and Dr. Henry SeSalvo, Arkansas.

Feed Committee — Bruce Poundstone, Kentucky, ex-officio chairman, E. A. Epps, Louisiana, Harold Hoffman, Florida, and W. J. Huffman, Mississippi.

Constitution and By-Laws Committee—Dr. Ernest Constable, North Carolina, chairman, Miss Frances Bonner, Louisiana, and Dr. Willis Richerson, Oklahoma.

Editorial Committee—F. D. Brock, Texas, chairman, James C. Oswalt, Georgia, and John Reitzel, North Carolina.

Nominating Committee — Parr Yeats, Oklahoma, chairman, George Marsh, Alabama, and Joe Taylor, Florida.

# What's Been Happening?

**This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.**

Food and Drug Administration assigned tolerances to two pesticidal erials, heptachlor and captan. Residues of 0.1 and 20 ppm respectively, e allowed. . . . An opportunity for added sales volume was seen in the on acreage allocation situation. Some 18 million acres of cotton are ex- ted to be planted for next season.

**U.S. Potash Co. approved expenditure of $3 million for exploration leading to greater output from its mines near Carlsbad, N.M. . . . Nichols Fertilizer & Chemical Co. purchased the Oklahoma Fertilizer & Chemical Co., Oklahoma City. . . . The American Potash Institute, Washington, D.C., announced that deliveries of $K_2O$ during the fiscal year of June, 1954, through May, 1955, totaled 2,164,997 tons, a new record. The figure was 8% greater than the previous fiscal year record.**

Stauffer Chemical Co. announced that its expanded captan plant in rry, Ohio, is now in operation. With the added output, the plant's annual oduction is rated at 12 million pounds a year. . . . Richard F. Brown was med a vice president and general works manager of Spencer Chemical , Kansas City, Mo.

William B. Porterfield, Jr., was named vice president of National Potash He was formerly associated with U.S. Potash Co., New York. . . . Wallace Gordon was named director of advertising for E. I. duPont de Nemours & , Inc., Wilmington, Del. He was formerly with duPont's Grasselli Chemi- s Dept. as assistant director of sales.

Directors of Monsanto Chemical Co., St. Louis, and Lion Oil Co., El rado, Ark., signed an agreement of merger of Lion with and into Monsanto. ockholders of the two companies will vote on the proposal Sept. 23. . . . The ydrous ammonia industry is operating at only about one fourth of its tential, speakers said at the meeting of the Great Plains Anhydrous Am- nia Assn.

A survey conducted by the Agricultural Ammonia Institute indicated at use of anhydrous during the first five months of this year is 17% greater an during the corresponding period a year ago.

Formation of Phillips Pacific Chemical Co., which will erect an ammonia tilizer plant in southeastern Washington, was announced by Phillips troleum Co. and Pacific Northwest Pipeline Corp., which will jointly own e newly-formed firm. . . . Shell Chemical Co. announced plans to build a w urea plant at Ventura, Cal.

The Food & Drug Administration extended the effective date of the sticide tolerance amendment to Oct. 31. The former deadline was July 22.

**Monsanto Chemical Co. announced it will market agricultural chemical formulations under the Monsanto label in a 15 state midwestern area beginning in 1956. . . . Southwest Agro Chemical Corp. said it will build a $2½ million plant at Chandler, Ariz. for production of anhydrous ammonia and other nitrogen products.**

A harmonious meeting on the grain sanitation campaign, conducted by e U.S. Department of Agriculture, appeared to point toward a smoother th for pesticide sales in the clean grain drive. . . . Pakistan was awarded $1,046,452 grant by International Cooperation Administration for equipment a fertilizer factory.

**Cities Service Co. and Continental Oil Co. have joined Mid-South Chemical Co. An expansion program calls for erection of an anhydrous plant at Lake Charles, La. . . . Western Phosphates has developed plans for expansion of its treble superphosphate and ammoniated phophate plant at Garfield, Utah.**

The sixth annual Pacific Northwest Fertilizer Conference at Boise, Idaho, ne 28-30, featured speakers from USDA, agricultural colleges, and custom erators from the western area. Reports were heard on fertility studies. . . . S. Tariff Commission reported that production of all pesticides and other ganic chemicals in 1954 totaled 419 million pounds, an increase of 18% over e 356 million pounds reported for 1953.

**Program committee members for the September meeting of the National Agricultural Chemicals Assn. (Spring Lake, N.J., Sept. 7-9) were named. M. R. Budd, Hercules Powder Co., Wilmington, Del., is chairman. . . . Members of the Association of Southern Feed & Fertilizer Control Officials met at the Jung Hotel, New Orleans, June 22-24. Frank E. Boyd, Virginia-Carolina Chemical Corp. pointed out the advantages of having fewer grades of fertilizers to avoid confusion and additional work. "Improvements in the number of grades must come through the cooperative effort of research, industry and education," he said.**

A. P. Gates was named assistant to C. Cecil Arledge, vice president of irginia-Carolina Chemical Corp. at Richmond and R. Andrew Jenkins was ade manager of V-C's Baltimore sales office. . . . Dr. Norman A. Shepard as retired from his post as chemical director of American Cyanamid Co.

The National Agricultural Chemicals Assn. announced the appointment Donald L. Miller as editor of the association's news service. He succeeds cott Runkle who resigned recently.

Thunderbird Chemicals, Inc., announced plans for construction of a $13 illion anhydrous ammonia plant near Kyrene, Ariz. President of the new rm is Fred Shanaman, also president of Pennsylvania Salt Mfg. Co., of ashington. A plant site of 122½ acres has been procured.

A series of revised index numbers of prices of fertilizer materials for the ars 1910 to 1954 was published by the University of Maryland Agricultural periment Station's department of agricultural economics and marketing. he changes were made to "provide a more realistic picture of the compara- ve prices of fertilizer materials (some of which) no longer represent a gnificant quantity relative to the total of all fertilizer materials," according Paul R. Poffenberger, University of Maryland.


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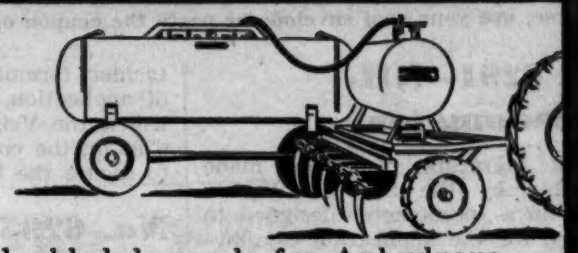
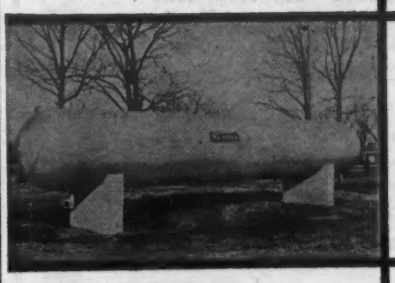


**TODAY'S** doubled demands for Anhydrous Ammonia mean doubled profits for you if you have adequate storage and handling equipment. Beaird helps you meet these equipment requirements with the first complete line of equipment for every plant and field need. Now, through Beaird you can consolidate your purchasing, financing and service responsibility at a single source. You also benefit from the latest design improvements that make NH3 easier, safer to use, and from Beaird's experienced engineering and planning assistance to help you with your storage requirements — all without extra cost.

More and more dealers are relying on Beaird equipment for the extra storage facilities needed to meet today's doubled production and demand. At the plant or on the farm, Beaird safety-built storage and handling equipment is your sure way to bigger profits in anhydrous ammonia. *Before you buy, ask your Beaird representative about a planned storage and field equipment program designed to fit your requirements.*

**FOR APPLICATION**

Beaird applicator tanks — 110, 150, and 200-gallon sizes. Available unfitted or fitted with highest-quality fittings. Gleaming white "Weather-Weld" enamel finish.



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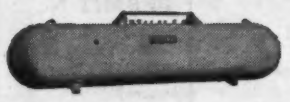
Beaird packaged storage station available for do-it-yourself installation with all necessary pipe and fittings, pump and safety controls. Shown: 6,000-gallon; other sizes from 2,000 to 30,000 gallons.



**MOBILE FIELD SUPPLY**

Beaird truck and trailer tanks, 500 and 1,000-gallon sizes, equipped with internal baffles to meet all state regulations. Dual fill valve couplings cut filling time in half. Long lasting gloss white "Weather-Weld" enamel finish.

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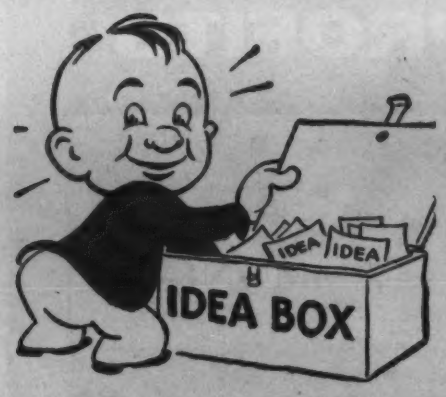


# What's New...

## In Products, Services, Literature

**You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.**

### No. 6291—$NH_3$ Speedometer

New literature has been made available by the Stewart-Warner Corp. on a speedometer designed to be used for the application of anhydrous ammonia ($NH_3$) or any fertilizer, insecticide or weed killer. The unit registers over-the-ground speed in miles per hours and any variation in speed is immediately reflected in the reading. It registers distance traveled in miles and can be installed on any wheel tractor, fertilizer or spray rig, or on any slow moving farm machinery. To secure the literature, including price information, check No. 6291 on the coupon, clip and mail it to this publication.

### No. 6293—Heptachlor Booklet

A new, pocket-size booklet showing cotton insects in natural color is now available. The booklet which shows the boll weevil, cotton flea hopper, thrip, rapid plant bug, tarnished plant bug, cutworm and armyworm contains valuable information on cotton insect control, the use of heptachlor formulations and the rates of application, according to its publisher, the Velsicol Corp. Check No. 6293 on the coupon, clip and mail it to secure the booklet.

### No. 6295—Ammonia Leak Detector

A new pocket-size device for detecting ammonia leaks is being offered to ammonia users by the Nitrogen Division of Allied Chemical & Dye Corp. The device may be obtained free of charge by circling No. 6295 on the coupon which appears elsewhere on this page and returning it to this newspaper.

### No. 6278—Algae Control

A new product available only in the South is described as a chemical cure for "sick" farm and fish ponds by its manufacturer, Hercules Powder Co. The chemical is "Delrad" and it is claimed to be unusually effective for the control of algae in farm ponds, lakes, irrigation canals and other bodies of water. Small amounts of the product are said to destroy the pestiferous algae and act to disintegrate the algae. Inquirers from the South may obtain more complete information by checking No. 6278 on the coupon and mailing it to Croplife.

### No. 6279—Pump

Hypro Engineering, Inc., is marketing a portable pump weighing 26 lb., complete with motor, hinged carrying handle and a vacuum switch that permits untended operation. Its capacity is up to 5 gal. per minute with pressure up to 30 lb., and it is said to handle clean or dirty water with a minimum of clogging. It lifts water up to 10 ft. unprimed or 22 ft. primed. Secure more complete details by checking No. 6279 on the coupon and mailing it.

### Also Available

**The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.**

### No. 6282—Screen Bulletin

Publication of bulletin 243, a new eight-page, two-color bulletin describing the Symons V-Screen is announced by Nordberg Manufacturing Co. This screen is specifically designed for fine screening, for sizing, dewatering, dedusting, cleaning, and washing. The bulletin states that the screen does not depend on gravity alone for its screening action, combining centrifugal and gravitational forces. Details of construction and operation are given. Secure the bulletin by checking No. 6282 on the coupon and mailing it to this publication.

### No. 5248—Blender

Automatic blending of feed or fertilizer in exact proportions is claimed for a new high speed batch or continuous mix blender introduced by Baughman Manufacturing Co. The blender, designated as model 55, can also be pre-set to deliver any quantity of feed or fertilizer desired, automatically signaling or shutting itself off when the specified amount has been delivered, without previously weighing the material, the company states. The unit consists of three hoppers, each of 49 cu. ft. capacity, emptying by conveyor belt into a common auger-type conveyor tube, where the materials are mixed as they are conveyed to the customer's truck. Flow of ingredients from the hoppers is controlled by a gate which is set by a graduated scale to the required opening indicated by a blending chart mounted on the side of the unit. The blender can also be used as a batch mixer. The materials are weighed before being loaded into the hopper, the gates set and the mixing operation started, with all three hoppers emptying simultaneously. Special size units are also available. Secure more complete information by checking No. 5248 on the coupon and mailing it.

### No. 6276—Bagging System

New developments concerning the 9-in. single-screw feeder overhead and standard Richardson E-50 automatic scale system as used in one fertilizer plant are now available from the Richardson Scale Co. The installation referred to is at the Knoxville (Tenn.) Fertilizer Co. Richardson officials say that two men can now bag with acceptable accuracy as many as 15 hundred lb. bags per minute of the lightest fertilizer and 16½ hundred lb. bags per minute of a slightly heavier product. Secure more complete details by checking No. 6276 on the coupon and mailing to Croplife.

### No. 6288—Steel Building

Development of a new "straight wall" pre-fabricated steel building featuring trussless construction, and designed to meet storage and warehousing needs of fertilizers and farm chemicals, is announced by the Engineering and Research division of the Wonder Building Corporation of America. It is claimed that the building can be erected in a matter of hours by as few as two workers using nut and bolt fasteners. Erection costs are said to average 30¢ per square foot and purchase costs are $1.[illegible] per square foot, for a complete building.



Company spokesmen say that the structure is designed to meet [illegible] building code requirements and will withstand wind velocities up to 1[illegible] miles per hour. Straight-wall construction facilitates mechanized materials handling procedures involving palletization or similar stacking operations. Walls rise vertically to a height of 9 feet before curving to form a semi-circular roof. The building shown is 48 ft. wide; others range from 30 to 50 ft. in width, and from 12 to 18 ft. in height. Secure more complete details by checking No. 62[illegible] on the coupon and mailing it to the publication.

### No. 6287—Liquid Fertilizer

The Schrock Fertilizer Service has announced an addition to its fertilizer line. The product is a liquid fertilizer called Liqui-Green with Leaftone and is said to contain a balanced combination of nitrogen, phosphate and potash as well as trace elements such as sulphur, magnesium, boron, zinc, cobalt, iron, copper, molybdenum and manganese. Leaftone is said to be a chemical additive to facilitate better leaf absorption and prevent burning

**Send me information on the items marked:**

| | |
|---|---|
| ☐ No. 5248—Blender | ☐ No. 6283—Aerosol Film |
| ☐ No. 5252—Stacker | ☐ No. 6284—Booklet |
| ☐ No. 6275—Insect Applicator | ☐ No. 6285—Sprayer |
| ☐ No. 6276—Bagging System | ☐ No. 6286—Thiophene |
| ☐ No. 6277—Weed Killer | ☐ No. 6287—Liquid fertilizer |
| ☐ No. 6278—Algae Control | ☐ No. 6288—Steel Building |
| ☐ No. 6279—Pump | ☐ No. 6291—$NH_3$ Speedometer |
| ☐ No. 6280—Slide Film | ☐ No. 6292—Fly Repellent |
| ☐ No. 6281—Applicator | ☐ No. 6293—Heptachlor Booklet |
| ☐ No. 6282—Screen Bulletin | ☐ No. 6295—Detector |

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gallon of the product can be with 50 gallons of water. Fifty gallon drums are available. Small for retail sales will also be available according to the company. Secure more complete details by checking No. 6287 on the coupon and dropping into the mail.

## . 6275—Insect plicator

new, 4-row, granular, insecticide icator has been announced by E. S. Gandrud Co., Inc. Called the ly Hi-or-Lo Spreaderette, the applicator is designed to provide ctive corn borer control over a

od of several weeks with one apation. Adjustable to heights of 3 ft., the unit drops granular DDT the corn whorl where leaves ch to stalk.

ompany officials claim that the hine is capable of handling all ular insecticides including aldrin, drin, chlordane, heptachor, DDT toxaphene, and permits effective rol of cloverleaf weevils, chinch s, grasshoppers, army worms, et clover weevils, wire worms and tle bugs, as well as corn borers. ck No. 6275 on the coupon, clip mail it to Croplife to secure e details.

## o. 6281—Applicator

he John Blue Co. announces that new rigid shank applicator is deed for use in tough soils where ection of applicator blades is a blem. The announcement states "four types are available for with tool bars of almost every and description. Exclusive truss ne design gives maximum strength minimum weight. The shanks constructed of alloy, heat treated el. . . . " Another feature is med to be the clamp design which ntains the applicator in the cor running position. "Heavy duty s provide adequate strength for mping on the tool bar and a shear on the applicator blade prevents age in the event an obstruction encountered," the announcement s and secure more complete de- by checking No. 6281 on the pon and mailing it.

## o. 6277—Weed iller

new, more concentrated, formuon of "Ammate" weed and brush er has been announced by the Pont Co. Identified as "Ammate" he new formulation contains 95% he active ingredient, ammonium amate, instead of 80%. The new duct is normally used at the rate 0 lb. per 100 gal. of water instead 75 lb. Containers for the new mulation are 60-lb. bags and 40-lb. r drums, corresponding to the preus 75-lb. and 50-lb. containers. It ecommended as a foliage spray control of woody plants, and as a mp treatment to prevent reouting. Check No. 6277 on the pon and mail it to secure more plete information.

## o. 6284—Booklet

he Granulite Co. has published a klet entitled, "Granulite Ag-Slag." product, Ag-Slag, is described by booklet as a liming material conning the minor elements: mangansulphur, boron, copper, iron and zinc. Facts about the product, the properties of calcium silicate slag, trace element composition and comments by users are included in the booklet. Dr. George N. Hoffer, consulting agronomist, is author of the foreword. Secure the booklet by checking No. 6284 on the coupon and dropping it in the mail.

## No. 6285—Sprayer

Two items have been added to the tractor mounted and Estate sprayer lines manufactured by the F. E. Myers & Bro. Co. The extended line includes a three point hitch tractor mounted sprayer and the Myers Baronet, a wheelbarrow type power sprayer. The three point hitch tractor mounted sprayer is designed for handling the wide range of chemical materials needed for weed, insect and disease control programs. A du-All spray pump provides pressures up to 300 lb. a sq. in. with discharge capacity of 6 gal. a minute. Secure more complete details by checking No. 6285 on the coupon and mailing it.

## No. 6292—Fly Repellent

The Residex Corp. is now marketing a new Crag repellent formulation for biting flies on beef and dairy cattle. Resipel, as the product is called, combines Crag fly repellent and methoxychlor. One application is claimed to keep dairy and beef cattle free of horn flies, stable flies, horse flies, house flies, mosquitoes and gnats for well over one week—in both barn and pasture. The product, a liquid, is diluted with water before use and applied directly to the animal's hide. It may be sponged on or applied with any normal spray equipment. It can also be used on back rubbers and in treadle sprayers. Resipel is now available at leading local agricultural dealers. Secure more complete details by checking No. 6292 on the coupon and mailing it.

## No. 6283—Aerosol Film

"The Spray's the Thing" is the title of a new color film about aerosols produced by the E. I. du Pont de Nemours & Co. (Inc.). The animated

(Continued on page 18)

**Impressive, Big-Space Advertisements are Appearing Month-After-Month in all These Publications**

Lion's Chemical Sales Division is working to make sure you sell more fertilizers. One way we help is by *consistent advertising* to farmers. This advertising emphasizes how plant foods can best serve the farmer by increasing his profits.

As for *quality*, you can build your own reputation on a solid basis when you depend on Lion, a leader in the field of petro-chemicals. You can depend on Lion for *uniform high quality* . . . always.

With two giant chemical plants producing around-the-clock, throughout the year, Lion, with its versatile and flexible manufacturing processes, is a dependable source of the most popular and economical types of nitrogen fertilizer materials.

It will pay you to feature and sell nitrogen fertilizers with the Lion emblem on the bag, or Lion's anhydrous ammonia. They sell easily, make consistent profits for you.

**Look To LION—A Leader in Petro-Chemicals—For Nitrogen Fertilizers**

Lion Anhydrous Ammonia • Lion Ammonium Nitrate Fertilizer • Lion Aqua Ammonia • Lion Nitrogen Fertilizer Solutions • Lion Sulphate of Ammonia

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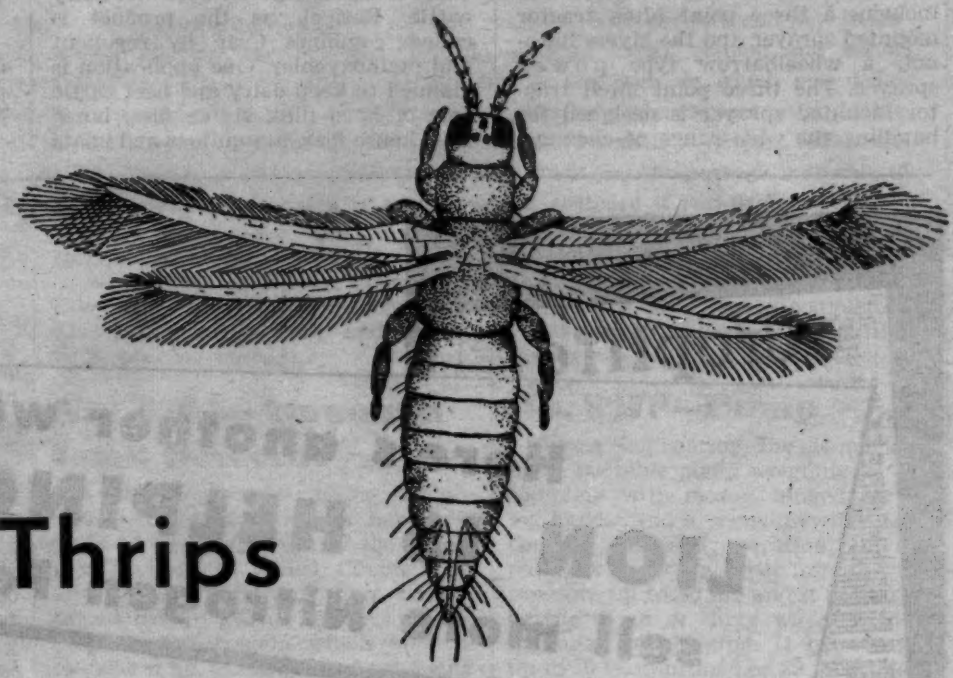
LION OIL COMPANY
CHEMICAL SALES DIVISION
EL DORADO, ARKANSAS

Mr. Dealer--Cut out this page for your bulletin board

# BUG OF THE WEEK



## Thrips

### How to Identify

Thrips are small insects, rarely as long as an eighth inch. They feed on the sap of various plants. Many thrips have four wings which are laid back over the abdomen when at rest. The wings are narrow and are fringed with long hairs, which account for the name of the order, Thysanoptera, which means "bristle wings." The foot of the thrip is peculiar, having no claws, but only hooflike depressions surrounding a small bladder.

### Habits of the Thrip

Eggs are laid on the tissues of various plants as a rule, although in some species of thrips, eggs are inserted into slits in the plants. Habits vary somewhat with the species of thrips. Gladiolus thrips, for instance, overwinter and may reproduce on the stored gladiolus corms. During the growing season, the larvae and adults attack the foliage and flowers of the growing plant. In the summer, a generation of the thrips may be completed in 2 weeks. Onion thrips pass the winter in the north in both adult and larval stages, on onion plants left in the fields, and in the crowns of alfalfa and clover. The female lays her small whitish eggs in the more slender tissues of leaves. These eggs hatch in from 4 to 10 days. The larvae begin eating as soon as they are hatched, pass through two stages while feeding upon the plants and complete their growth in about five days. They then enter the soil where they pupate. The pupal stage lasts about four days under favorable conditions. A generation thus is completed in about 2 weeks. Generations overlap and all stages may be found in fields during the summer.

### Damage Done by Thrips

Thrips damage a wide variety of flowers and crops, including onions, tobacco, citrus and cotton. They pierce the skin of young plants and then suck the sap, leaving malformed seedlings. In cotton, they punch holes in the cells of new cotton leaves and prevent full growth. The tobacco thrip mars leaves used for cigar wrappers and also injures seedling peanuts, causing many to die. The gladiolus thrip ruins flowers and foliage of growing plants. Plant viruses are known to occur in the order Thysanoptera, which includes thrips. The insect gets the virus from a diseased plant, then moves to a healthy plant and infects it during the feeding process.

### Control of Thrips

Materials for control of thrips differ considerably for thrip species. Heptachlor, aldrin and dieldrin, DDT, lime sulfur, wettable sulfur, nicotine sulfate and DDT-sulfur dust are mentioned in different sources as being effective. Due to the many species of thrips and specific recommendations for control of each, it is not possible here to describe details of each. Entomologists emphasize the importance of timing in the control of thrips.

Picture of harlequin bug furnished Croplife through courtesy of U.S. Department of Agriculture.

**Previous "Bug of the Week" features are being reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.**

# reat Plains Council uts Stress on Human lement in Problems

ARAMIE, WYO. — The Great ns Agricultural Council conclud- ts annual three-day meeting July 7 on the University of Wyoming pus with recommendations that ssed the human element in solv- short- and long-term problems in at Plains agriculture.

gricultural agencies represented the meeting included land-grant eges and universities, experiment tions, extension services, Soil Con- vation Service, Agricultural Re- rch Service, Agricultural Stabil- ion & Conservation committees, est Service, Farmers' Home Ad- istration and Farm Credit.

uring the meeting, E. L. Peterson, istant secretary of agriculture, how the U.S. Department of riculture is moving to help Great ins farmers stabilize their agri- ture, and Milward Simpson, Wy- ng's governor, emphasized that, the final analysis, the problems the region can be solved only by people who own and operate the d.

he council pointed out that it is ending on farmers and ranchers groups and individuals for ideas, dance and support in solving the blems.

Delegates from the 10 Great Plains tes agreed that the yearly hard- ps of some farmers and ranchers the land-damaging dust bowl uths are both symptoms of a stant long-range problem under dy by the council since it started 1936.

n an unofficial summary of its al report, the council said prob- s in critical areas of the plains lude: Improper land use, farm ts of improper size and organiza- n to fit conditions, inefficient use water resources, and livestock mbers in excess of feed supply.

he council also recognized that ne well-managed farms and nches have been damaged by ad- ent poorly handled lands.

n final action, the council set up additional subcommittee to gather, luate and disseminate research in- mation and point up needs for ad- ional research. It emphasized the d for an expanded and accelerated gram of soil and water resource veys and an enlarged study of mate in relation to hazards of ins farming and ranching.

Delegates also called for an ex- ded study of farm and ranch size d organization best adapted to bilizing plains agriculture. They ed for a critical study of existing ernmental program in relation to ming and ranching on the plains.

### Human Element

n pointing up the human element plains problems, the report said: ne great potential of the Great ins can be fully realized only by ting into effect the practices and cedures that will more completely trol the effects of the weather ards.

Drouth, floods and other disasters not be prevented—but the dam- ng effects can be greatly reduced. must be done by people. Hence, may say that the problem of viating the damages is a problem by, and for the people—mainly people living on the Great ins."

Mr. Peterson told the council that DA is interested in helping plains mers and ranchers help themselves tabilize their agriculture.

e noted that the Great Plains ricultural Conference May 31- e 2 in Denver between Ezra Taft nson, secretary of agriculture, and tion toward helping the states develop a permanent productive agricultural economy.

4. "Doing these things in such a manner that when the disaster of drouth does occur, its effects will result in the least possible damage to people and land."

Stating the position of the USDA, Mr. Peterson said, "We have no thought of coming from Washington to tell the people in the Great Plains what they should do. We hope we can help them to think out for themselves what they need to do."

Gov. Simpson noted with pleasure that agricultural experts do not wish to write off the Great Plains as a crop-producing region and put it all back into grass. They agree, he said, that more than three fourths of the present crop land can be cultivated safely if soil and water conservation and other good farming practices are followed.

governors of Great Plains states was a move in that direction. As a result of the Denver conference, he said, USDA already has taken three steps:

Step-up of soil survey program for completion in next three years. Land classification can be based on soil survey.

Program of credit for emergency use, associated with recommended land use.

Announced for 1956 ASC program year a provision whereby those practices needed to get non-cropland out of crop production can receive payments in excess of 50% of cost sharing normal for usual practices.

Mr. Peterson reminded the delegates that "any program, to be effective, must be understood by the farmers and ranchers who are to use it.

"We are concerned that public assistance available and presently in use shall not constitute an incentive through which the land of the region will be misused," he said. "It is our expectation following this meeting to further re-examine all of our programs so that they will make their greatest possible contribution toward our common objectives." He listed those objectives as:

1. "Maintaining a permanent farming and ranching system in the Great Plains area.

2. "Making their (the programs') maximum contribution to creating individual farming operations which return an acceptable income and living standard to the farm family.

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# WORLD REPORT

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

The combined efforts of aircraft and the products of the agricultural chemical industry are playing an increasingly important role in the maintenance of fertility and in combating the crop-destroying insects.

From Australia comes a report of the part played by an aircraft in sowing wheat and spreading fertilizer at the same time. In the wheat growing Wimmera district, a pilot, flying a Tiger Moth at heights of from 20 ft. to 60 ft., sowed 100 acres with wheat and spread fertilizer at the same time in two hours. By the usual methods the work would have taken at least two and one half days. On 40 acres the pilot dropped 100 lb. each of wheat and superphosphate, and on the remaining 60 acres, 70 lb. wheat and 100 lb. superphosphate.

The result of the experiment will not be known for three weeks by which time the seed should have germinated. Unfortunately, the wheat coverage was disappointing, observers report, because the seed failed to penetrate the heavy black soil which was soggy after rain. It will now be covered either by light harrowing or by the trampling of sheep.

However, despite this difficulty, it is believed that aerial sowing could help farmers who have to sow and spread fertilizer in a hurry, particularly when the earth is waterlogged and unworkable by orthodox methods.

## Insecticide Spreading

During the first half of this century insect pests in Central America were so destructive that cotton growing was virtually abandoned. Applications of insecticides with ground equipment proved much too slow to cope with the infestation. But in the last five years there has been an increase in the use of aerial application and it is reported to be successful.

In both Nicaragua and El Salvador, dusting and spraying are done entirely by aircraft on regular schedules. It is a high cost operation, but it is probably the biggest assist the countries concerned have had in their campaigns to grow cotton profitably. In Guatemala, too, dusting and spraying by aircraft are gaining acceptance, though some growers still continue to use ground equipment.

It is the abundant rainfall that stimulates the growth of insect pests and fungus in Central America. With no freezing temperatures between seasons to help control the pests, they infest the cotton crop every year in large numbers.

The most destructive pest, reports Charles H. Barber, an agricultural economist with the Foreign Agricultural Service of the U.S. Department of Agriculture, is the false pink bollworm; control is only possible at hatching time. The army worm is found in greater numbers, but it is easier to control because it feeds on leaves and can always be reached by insecticides. The boll weevil and aphids, other Central American pests, can be controlled by frequent dusting.

Mr. Barber reports that the only diseases causing appreciable loss are root rot and boll rot, the latter a result of heavy rainfall. There is also some bacterial leaf spot but it is not considered to be serious.

## New Treatment

The development of a new insecticide and seed dressing treatment which, it is hoped, will free East Africa's barley crops from bult fly has been announced.

G. M. Roddan, director of agriculture in Kenya, said work on the problem has been going on only for a short time but the chemicals used were already showing promising results.

## Greek Imports

The Agricultural Bank of Greece has invited offers for the supply of 10,000 to 20,000 metric tons of nitrogenous fertilizer and 5,000 metric tons of potassium fertilizers. This is but part of an intensive program to import fertilizers to aid the Greek agricultural industry. Trade agreements with various nations invariably involve negotiations for fertilizers and the latest agreement concluded, that with France, provided for the supply of fertilizers in exchange for Greek agricultural production.

## Chilean Nitrates

The Chilean government is studying a number of barter deals involving the exchange of nitrates for heavy machinery and other manufactured goods. Canada and Czechoslovakia are two of the countries involved in proposed deals while neighboring countries in Latin America are stated to be interested in making a trade.

Involved, according to the Chilean authorities, are 135,000 tons nitrates. Negotiations with Czechoslovakia are in the preliminary stage. The Latin American countries involved are understood to be Argentina, Peru and Bolivia.

The Chilean nitrate industry has been in poor straits for some years but greater government interest, and the introduction of new capital, is expected to be a major factor in allowing the producers to meet the competition from synthetic nitrate producers.

The Chilean Development Corp. is planning to establish a modern plant to work government owned nitrate deposits near Soronal in the province of Tarapaca.

Sales of nitrate in the year 1953-54 have been assessed at 1.5 million tons, slightly more than those recorded in the previous period. Profits totaled $13.4 million of which the government took $3.3 million.

## W. James Latimore In New DuPont Post

WILMINGTON — W. James Latimore has been appointed as assistant director of sales of the Du Pont Co.'s Grasselli Chemicals Dept., to succeed Wallace E. Gordon. Mr. Gordon becomes director of Du Pont's Advertising Dept. Sept. 1.

Mr. Latimore will have supervision of biological chemicals sales and development, and of export sales.

### COTTON MECHANIZATION

COLLEGE STATION, TEX.—Opportunities for farmers to increase cotton yields and lower production costs will be analyzed by a panel of experts at the ninth annual Beltwide Cotton Mechanization Conference here September 7-9.

The National Cotton Council points out that drouths in recent years have caused many cotton farmers to turn to irrigation in areas where they traditionally have depended on rainfall alone.

# PESTICIDES

(Continued from page 7)

**Table 1—Estimated Corn Acreages Treated With Soil Insecticides in Three States***

| State: | Year | Total acres treated by:— Insecticide-fertilizer mixes | Other methods† | Total |
|---|---|---|---|---|
| Iowa | 1951‡ | 10 | 15 | 25 |
| Iowa | 1952 | 15,000 | 10,000 | 25,000 |
| Iowa | 1953 | 200,000 | 125,000 | 325,000 |
| Iowa | 1954 | 362,500 | 237,500 | 600,000 |
| Nebraska | 1954 | 220,000 | 1,520,000 | 1,740,000 |
| Illinois | 1954 | 12,500 | 112,500 | 125,000 |

*Iowa estimates for 1953 to 1954 are based on surveys of county extension directors conducted by Dr. Harold Gunderson. The 1954 estimates for Nebraska and Illinois were obtained by personal communications with entomologists Roscoe Hill and Robert Roselle of Nebraska and John Bigger of Illinois.

†Mostly sprayed, either broadcast or banded on the rows with planter-mounted sprayers. This figure does not include the acreage planted with insecticide-treated seed.

‡The 1951 acreage in Iowa consisted of Iowa State College experimental fields.

**Table 2—Summary of Recent Pesticide-Fertilizer Mixture Usage (After K. D. Jacob)**

| Region | States where mixtures are registered or sold | No. companies registering or selling | Short tons sold 1953-54 |
|---|---|---|---|
| Middle Atlantic | Maine, N. H., Vermont, Mass., R. I., Conn. | 3 | 1,800 |
| South Atlantic | Virginia, N. C., S. C., Georgia, Florida | 70 | 73,200 |
| East North Central | Ohio, Indiana, Illinois, Wisconsin | 9 | 6,700 |
| West North Central | Minn., Iowa, Mo., N. Dak., S. Dak., Neb., Kansas | 28 | 42,600 |
| East South Central | Ky., Tenn., Ala. | 10 | 1,200 |

**mixtures have been: (1) Blending instead of thorough mixing the insecticide and fertilizer, resulting in lack of uniformity in the finished product. (2) Adding the insecticide to warm, uncured fertilizer, resulting in loss of the insecticide by volatilization. These practices must be avoided if the mixtures are to give the results that farmers rightfully expect of them.**

In summary, good insecticide-fertilizer mixtures usually involve the following: (1) Addition of the insecticide on well cured fertilizer. (2) Impregnation of the fertilizer with a solution of the insecticide in about 3 gallons of a high flash point solvent. (3) Thorough mixing of the pesticide and fertilizer.

The equipment for putting liquid or other insecticide formulations into fertilizers is quite variable. Some plants do the job with large drum-type mixers. Others spray the insecticide on the fertilizer as it passes by in a thin ribbon on a conveyor belt. Good results have been obtained with 3 to 6 nozzles with turning devices between them located just ahead of the bagging operation.

Why have soil insecticides been so well and so promptly accepted by farmers? Many factors entered the picture but the following predominate:

(1) Soil insect problems are real in many areas, and the results with soil insecticides are usually both sure and spectacular.

(2) Soil insecticides are economical and easy to apply; insecticide-fertilizer mixtures involve no extra work whatever for the farmer.

(3) The use of soil insecticides has been promoted well and soundly by industry, extension specialists and others.

(4) High corn prices and acreage allotments make soil insecticides costing from $1.50 to $2.50 per acre, cheap crop insurance.

**In my opinion the use of soil insecticides is still in its infancy. How far it will go is anyone's guess. After seeing the treated acreage in Iowa jump from zero in 1950 to about 1 acre out of every 17 planted to corn in 1954, I don't think I'll be surprised at anything!**

Some statistical information which seems pertinent at this point is given in Table 2 compiled from reference number 3. In this table certain states are grouped by regions, and for each region the number of companies registering or selling pesticide-fertilizer mixture is given, along with the estimated number of short tons used in 1953-54.


**Publications on Insecticide-Fertilizer Mixtures**

1. Farrar, M. D., 1951—Official Publication No. 4 of the Assoc. Amer. Fert. Control Officials, pp. 58-64.
2. Jacob, K. D., 1954—Jour. Agr. and Food Chemistry 2, pp. 970-976.
3. Jacob, K. D., 1955—Croplife 2, July 4 issue, pp. 6-7.
4. Kulash, W. M., 1955—Farm Chemicals 118, February, pp. 35-41; March, pp. 35-40.
5. Lilly, J. H., 1955—National Fertilizer Review 30, pp. 3-6.
6. Woodle, H. A., and W. C. Nettles, 1950—So. Car. Agr. Ext. Serv. Circ. 352.


# WHAT'S NEW

(Continued from page 15)

16 mm. color film shows how the aerosol insecticide ("bug bomb") principle can benefit a typical family. It runs 13½ min. To secure more information about the film check No. 6283 on the coupon and drop it in the mail.

## No. 6286—Thiophene

Sharples Chemicals, Inc., a subsidiary of Pennsylvania Salt Manufacturing Co., has announced it is now supplying commercial quantities of thiophene for use in the manufacture of dyes and pharmaceuticals. Thiophene is expected soon to be used in agricultural chemicals and other products, the firm states. Samples and a technical bulletin on thiophene are available by checking No. 6286 on the coupon, mailing it to Croplife.

## No. 6280—Slide Film

A new slide film in sound and color titled, "Weed Control in Peanuts With Crag Herbicide-1," is now available.

This seven minute film is provided without charge by Crag Agricultural Chemicals, Carbide & Carbon Chemicals Co., a Division of Union Carbide and Carbon Corp. Check No. 6280 on the coupon and mail it to secure the film.

## No. 5252—Stacker

A load handler called by the trade name, Grand Lift King, has been announced by the Allied Manufacturing & Sales Co. The unit is described as a streamlined fork or platform lift stacker powered by one or two batteries. Fourteen models with load capacities of 750-3,000 lb. are available. Lifting heights range from 60-100 in. Full information may be obtained by checking No. 5252 on the coupon and mailing it.

### DUSTER CRASHES

FT. COLLINS, COLO.—A broken back and left leg resulted for Bill Bertram, a crop duster, when his plane crashed on a farm near here recently. The accident occurred when Mr. Bertram pulled up his plane too sharply as a signal that he was finished with the run. His craft stalled and then swept to the ground. The plane, worth $1,500, was a total loss.

# MEETING MEMOS

g. 15—National Joint Committee on Fertilizer Application, Cooperative Meeting with the American Society of Agronomy, University of California, Davis Campus.

g. 15-19 — American Society of Agronomy and Soil Science Society of America, University of California, Davis Campus.

g. 15-20—Farm & Home Mechanization Pageant, Michigan State College, East Lansing, Mich.

pt. 7-8—Corn Belt Anhydrous Ammonia Conference, University of Illinois, Champaign-Urbana Campus, Advance Registrations Room 216, Davenport Hall, Urbana, Ill.

pt. 7-9 — National Agricultural Chemicals Assn., Spring Lake, N.J.; Lea S. Hitchner, NAC Executive Secretary, 1145 19th St. N.W., Washington 6, D.C.

pt. 7-9 — Ninth Annual Beltwide Cotton Mechanization Conference, Texas A&M College, National Cotton Council of America, Box 18, Memphis 1, Tenn.

pt. 11-16—American Chemical Society, National Meeting, University of Minnesota, Minneapolis.

pt. 28-30—New England Fertilizer Conference, Poland Spring House, Poland Spring, Maine.

ct. 3-5—Carolinas - Virginia Pesticide Formulators Assn., Inc., Annual Meeting, Holly Inn, Pinehurst, N.C., J. B. Maddrey, 3111 Broad Creek Road, Norfolk 12, Va., Secretary-Treasurer.

ct. 11—Western Agricultural Chemicals Assn., Annual Meeting, Hotel Claremont, Berkeley, Cal., C. O. Barnard, 2466 Kenwood Ave., San Jose, Cal., Executive Secretary.

ct. 17-18 — Fertilizer Section, National Safety Congress, LaSalle Hotel, Chicago; Thomas J. Clarke, Chairman.

ct. 27—Middle West Soil Improvement Committee, Annual Meeting, Sherman Hotel, Chicago; Z. H. Beers, Executive Secretary, 228 N. LaSalle St., Chicago, Ill.

ov. 2-3 — Annual Convention, Pacific Northwest Plant Food Assn., Pilot Butte Inn, Bend, Ore.; Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., Secretary.

ov. 3-4—Northeastern Division, American Phytopathological Society, Eastern States Farmers Exchange, Inc., 26 Central St., West Springfield, Mass. B. H. Davis, Department of Plant Pathology, Rutgers, University, New Brunswick, N.J., secretary.

ov. 4—Fertilizer Section, South Carolina Annual Accident-Prevention Conference, Hotel Francis Marion, Charleston, S.C., Anton L. Foster, International Minerals & Chemical Corp., General Chairman.

ov. 7-8—California Fertilizer Assn., Thirty Second Annual Convention, Hotel Mark Hopkins, San Francisco; Sidney H. Bierly, Executive Secretary & Manager, 475 Huntington Drive, San Marino, Cal.

ov. 17-18—Nitrogen Solution Field Day, National Nitrogen Solution Assn., State Armory, Springfield, Ill.; Roy F. Broyhill, Dakota City, Neb., meeting chairman.

ov. 29-Dec. 2 — Entomological Society of America, Netherlands Plaza Hotel, Cincinnati.

ec. 5-7—Agricultural Ammonia Institute, Kansas City; Jack F. Criswell, Executive Vice President, Claridge Hotel, Memphis, Tenn.

ec. 5-7—Chemical Specialties Manufacturers Assn., 42nd Annual Convention, Roosevelt Hotel, New York; H. W. Hamilton, 50 E. 41st St., New York 17, N.Y., Executive Secretary.

Dec. 8-9—Michigan Fertilizer and Lime Conference, Michigan State College, East Lansing.

Dec. 15-16—Beltwide Cotton Production Conference, Hotel Peabody, Memphis, Sponsored by the National Cotton Council.

Dec. 28-30 — American Phytopathological Society, Atlanta, Ga.; Glenn S. Pound, University of Wisconsin, Madison, Wis., Secretary.

**1956**

Jan. 4-6—Weed Society of America, Charter Meeting, Hotel New Yorker, New York, W. C. Shaw, U.S. Department of Agriculture, Beltsville, Md., Secretary-Treasurer.

Jan. 15-17—New Mexico Grain & Feed Dealers Assn., Annual Convention, Hilton Hotel, Albuquerque, with Special Portion for Fertilizer and Farm Chemical Dealers, H. B. Hening, Albuquerque, Secretary.

Feb. 15-17—California Weed Control Conference, Sacramento and Davis, Cal.; Oliver A. Leonard, Botany Dept., University of California, Davis, Cal., Secretary.

Feb. 15-17—Western Weed Control Conference, Sacramento and Davis, Cal.; W. C. Robacker, U.S. Department of Agriculture, Nevada Agricultural Experiment Station, Reno, Nev., Secretary-Treasurer.

Jan. 26-29 — Agricultural Aircraft Assn., Inc., Sixth Annual Convention, Wilton Hotel, Long Beach, Cal.; Wanda Branstetter, Route 3, Box 1077, Sacramento, Cal., Executive Secretary.

June 28-30—Association of Southern Feed & Fertilizer Control Officials, 14th Annual Convention, Hotel Roanoke, Roanoke, Va., Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

## Utah Quarantines Crop from Areas Infested by Weed

PROVO, UTAH — Infestation of squarros knapweed in Juab County, Utah, has made necessary a quarantine on crops from the Tintic area, mostly dryland wheat, to halt possible spread of the weed which now infests thousands of acres.

**Some spraying for control of the weed has been done, but results have not yet been ascertained. According to S. R. Boswell, Utah county agent, the weed is more prolific where land has been cultivated for crops, than it is in areas where the ground has been left undisturbed. The weed is presently in blossom, he reports, and in a couple of months will begin to scatter its seed.**

"The weed is a prolific seeder. Each seed has a little hook which catches on livestock or anything that moves through the area." Livestock do not eat the weed at any time, Mr. Boswell added, because the taste of it is too bitter.

Experiments toward control are being made by the Utah Agricultural Experiment Station, but it is too early yet to determine results.

### AT CONNECTICUT STATION

NEW HAVEN, CONN.—Dr. Leonard Broadbent, entomologist and plant pathologist at the Rothamsted Experimental Station in England, is studying and conducting research at The Connecticut Agricultural Experiment Station, according to Dr. James G. Horsfall, director.

# Spruce Budworm Control Results Being Studied in Forested Area

MISSOULA, MONT.—The Bitterroot and Gallatin national forests in Montana and northern Idaho were being surveyed this week to determine the results of aerial spraying operations against spruce budworm completed in the two areas July 30.

The aerial spraying job is one of the largest ever attempted in the nation and the two forests were chosen this year because of the high percentage of Federal ownership in the area, said Clarence B. Sutliff, director of the project for the U.S. forest service region one here.

**The project will last three years and cover more than 2,000,000 acres of timber, according to P. D. Hanson, regional forester. Spraying contracts this year were awarded to Central Aircraft Co., Yakima, Wash., which furnished 11 Stearman single engine aircraft with a carrying capacity of 150 gallons of spray each.**

A total of 132,856 acres in the Gallatin and 161,000 acres in the Bitter-root were sprayed with DDT insecticide dissolved in oil. The spraying had to be completed during a brief period of the insect's life when it is vulnerable to poison so forest service officials also called into service a B-18 (cq) flying fortress equipped for spraying operations.

**The huge plane, owned by Biegert Brothers of Shicklie, Neb., is equipped to carry 2,300 gallons and was used in a 30,000 acre area of the Bitter-root project. The plane flew 180 miles an hour about 2,055 feet above tree top level and delivered spray at a rate of 170 gallons a minute.**

Mr. Sutliff said the cost of the operation was $1.09 an acre. The area sprayed in Central Idaho (reported in Croplife last week) cost 80 to 90 cents an acre.

He pointed out that the spruce budworms which defoliate young trees were a serious threat to Montana's $1,000,000 Douglas fir Christmas tree industry.

The worms differ from the spruce bark beetle, also a major forest problem in the area, in that damage has a long-range economic aspect. Salvage is possible from beetle damage and miles of new forest roads are being or have been built into previously inaccessible areas to salvage beetle damaged trees.

The budworm kills young trees within two or three years, reducing future forest crops, forest officials said.

Officials said the insect and disease damage to forests is several times greater than destruction by fire. The spraying will be extended over the next two or three years. Surveys will be conducted this fall and winter to determine next priority areas.

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# Growers Wary of Boll Weevils Despite Low Population Report

Boll weevil infestations throughout the cotton belt are reported to be relatively light, but growers in the area, recognizing the potential threat of the pest, have been applying insecticides heavily to prevent an outbreak. According to information from the cotton belt, the boll weevil population at the first of August was only a little higher than at the same time last year when the infestation was unusually light.

**Experts have indicated that with normal weather during the remainder of the season, growers will be able to control the pest so that weevil damage will be moderate, perhaps 6 to 8% of the optimum yield per acre. This is compared to the damage done last year of only 3.3%, considered to be the lightest in many years.**

The weather plays an important part in calculating how serious the boll weevil threat may become later in the season. If rainy weather should come with below-normal temperatures during the next few weeks, greater damage than now expected may be seen. This type of weather gives the insect the advantage. Predictions of light damage, it is pointed out, are prefaced on the assumption that weather throughout the remainder of August will be approximately normal.

**Higher yields per acre than those attained last year are indicated in North Carolina, South Carolina, Georgia, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, and Oklahoma. The Texas yield prospect is a little under last year. Sharp yield reductions are indicated in Missouri, New Mexico, Arizona, and California.**

The average indicated yield per acre for the cotton-growing states as a whole is 342 pounds as compared with the 1954 record high of 341 pounds and the five-year average of 297 pounds.

## INSECT NOTES

(Continued from page 5)

further damage and reduce egg laying for next year.

Insecticide applications to save second crop legumes for hay or seed have already been applied. For the most part, sprays applied now will prevent some hopper migration to corn but will not save the second crop legume.

Where third crop hay is to be taken, sprays should be applied soon after hay removal.

**Second brood corn borer moths have been flying in central Iowa for 27 days. Egg masses have accumulated in some fields to the point that 70 masses per 100 plants have been deposited. The average is 25 per 100 plants.**

Third instar larvae from the second brood have been observed but it is doubtful that farmers, because of this prolonged flight, will be able to find egg mass counts sufficiently high to warrant treatment in this area. Seedsmen and canners, however, are prepared to take control measures. Likewise, farmers in fields in which green silks are still showing could prevent much ear dropping and stalk breakage by applying a preventive application.

Flea beetles and egg plant lace bug are making small holes in the leaves of garden plants.

Cicada killers are digging holes in the ground for the purpose of laying eggs on paralyzed cicadas they have placed there.—Earle S. Raun.

### European Chafer Seen in West Virginia

MORGANTOWN, W. VA. — The European chafer, an insect that seriously damages crop plants, has been found in West Virginia, according to Prof. C. K. Dorsey, entomologist at the West Virginia University agricultural experiment station.

The insect was found last year near Capon Bridge in Hampshire County. Since it was discovered, surveys have been conducted to determine the area of spread of the pest, and the area was sprayed from the air to help control the pest.

The chafer was introduced into the U.S. sometime between 1940 and 1946 from Europe, and was first noticed in the Newark vicinity. Now it can also be found in Connecticut.

The immature forms or "grubs" of the chafer look much like the common "white grub." They feed on the roots of grasses, and are particularly destructive to pasturelands, winter wheat and other important grasses.

**In some cases, wheat crops have been totally destroyed and hay yields have been reduced as much as 80%. The insects also cause extensive damage to roots of woody plants in nurseries.**

The adult forms are medium-sized, brown beetles which appear much the same as the common "June beetles," to which they are closely related. They feed destructively on the leaves of a number of trees and shrubs.

## FDA

(Continued from page 1)

**may ask an additional 30 days for further study.**

In this connection, it is also noted at FDA a great reluctance on the part of chemical companies to accept zero residual tolerances since they appear in the eyes of the applicants to carry a negative sales connotation. FDA officials point out that the Miller amendment to the FDA law provides from zero to higher tolerance standards and that a zero tolerance does not necessarily exclude a product from use on raw agricultural commodities. Notwithstanding this point of view of FDA, it is asserted that the chemical companies are unwilling to attempt marketing with such an inferentially negative recommendation. They are said to feel that state colleges and other farm advisory agencies will be reluctant to recommend use under the condition of zero tolerance.

FDA officials point up their views with comments that in many agricultural fields, use of economic poisons are permitted with residual tolerance of zero. In the apple industry, for example, some products are used prior to blossoming of the trees and development of the fruit and orchardists use sprays that adhere to tree barks and for which no residual tolerance is permitted on the fruit itself.

**Another situation, possibly of lesser importance, that causes withdrawal and amendment of applications for tolerances, occurs where some chemical companies submit requests which cover too broad a variety of uses on agricultural commodities. In those cases the applicant may be too eager to cover a broad field of use and in so doing, may fail to support all uses with adequate scientific data. Under those conditions it is FDA's practice to consult with the applicant and suggest that the original petition be amended to exclude those commodities for which adequate supporting data is not available.**

The application would thus be amended to cover only those commodities wherein the data is adequate. That practice has been accepted by some applicants and has been the basis for the withdrawal and amending of some petitions submitted recently.

## POTASH

(Continued from page 1)

over last year. Making up these agricultural deliveries were 1,065,565 tons $K_2O$ as muriate, 787 tons $K_2O$ as manure salts, and 68,253 tons $K_2O$ as sulphate of potash and sulphate of potash-magnesia. The chemical industries took 92,264 tons of potash salts containing an equivalent of 57,296 tons of $K_2O$, a 29% increase in salts and $K_2O$ over the first half of 1954. Exports to other than Institute countries amounted to 21,529 tons $K_2O$, an increase of 669% over last year.

**During the second quarter of 1955, total North American deliveries including imports amounted to 911,746 tons of potash salts containing an equivalent of 539,256 tons $K_2O$. This represented an increase of 5% in salts and $K_2O$ compared to the tonnage delivered during the corresponding period in 1954. Imports comprised 74,958 tons $K_2O$ of the above and include those during the first five months of 1955.**

Deliveries during the quarter for agricultural purposes in the United States, Canada, Cuba, Hawaii, and Puerto Rico (Institute countries) amounted to 861,312 tons of salts equivalent to 507,974 tons of $K_2O$, consisting of 474,555 tons as muriate, 268 tons as manure salts, and 33,151 tons as sulphate of potash and sulphate of potash-magnesia.

Deliveries for chemical purposes amounted to 46,817 tons of salts, equivalent to 29,106 tons of $K_2O$. Exports to other than Institute countries totaled 2,176 tons $K_2O$.

The API had reported earlier (Croplife, Aug. 8, page 1) that potash deliveries for the fiscal year, 1954-1955 (June, 1954 through May, 1955) set a new record of 2,164,997 tons. This represented an increase of 8% over the previous fiscal year.

## *Calspray Names Superintendent For New Plant*

RICHMOND, CAL.—The appointment of Calvin C. Dorough as superintendent, Fertilizer Manufacturing, for the new fertilizer project now under construction by the California Spray-Chemical Corporation here has been announced by Frank J. Juchter, manager, Manufacturing Department of Calspray.

The four new Calspray fertilizer plants Mr. Dorough will supervise in Richmond are part of the $16,000,000 six plant fertilizer project of Standard Oil Company of California and its subsidiary, Calspray. (See Croplife March 7, page 1 and August 1, page 1.)

Mr. Dorough comes to Calspray from Best Fertilizer Company, where he was plant manager. Previous to this, he was plant engineer for 18 years at the Spreckels Sugar Company's plant in Salinas, California.

Reared in Little Rock, Ark., Mr. Dorough was educated at the University of California where he received his B.S. in engineering. During World War II, Mr. Dorough served in the Navy.

# USDA Devises Way To Measure Soil-Held Phosphorus

WASHINGTON, D.C.—Using radioactive phosphorus as a research tool, soil scientists of the U.S. Department of Agriculture have developed a successful method of measuring available phosphate in any soil so accurately that it can be expressed in terms of pounds of superphosphate equivalent per acre.

**To a limited extent, the method is now being employed at some Federal field stations and by cooperating agricultural experiment stations to improve phosphate fertilization recommendations. USDA expects the method to be used more widely as research stations become equipped to handle radioactive fertilizers.**

Development of this method marks science's first penetration of soil make-up to learn how much of any specific plant nutrient is actually available to plants. It is a forerunner of the development of similar methods of determining the amounts of other nutrients in the soil that are available to plants, expected to result from current USDA research.

**Scientists Maurice Fried and L. A. Dean worked out their phosphate test in the Atomic Energy Laboratory at USDA's Plant Industry Station, Beltsville, Md., by measuring plant absorption of phosphorus from two sources: (1) The natural soil-held phosphate, and (2) radioactive phosphate fertilizer mixed with the soil.**

Since the radioactivity does not change the phosphates except for the identifiable "tag" on the radioactive material, the scientists reasoned that phosphate would be taken up by plants from both sources in the same proportion that the two phosphates were available in the soil.

## COTTON CROP

(Continued from page 1)

**the 1955 cotton crop, USDA notes, "If present prospects materialize, the indicated yields per acre of 367 lb., would be 26 lb. above last year's record and 88 lb. above average."**

In connection with USDA cotton crop estimates it must be noted as a warning that USDA reporting for this crop has been erratic with final reports varying widely from the first estimates, changing as much as a million bales higher on one side, but rarely reflecting as high reductions on the down side. For a selected period of years in the last 15, it is noted that in years of good production forecasts on Aug. 1 the final crop was below the Aug. 1 estimate four times. It was on the high side only twice but in each of these occasions the addition was more than a million bales.

In view of these broad variations in USDA crop reporting in this field it is appropriate that attention be given to other details of the report itself, particularly in connection with the pesticide and weed control area. The report notes, "plants have a heavy set of squares but less bolls both large and small than on Aug. 1 a year ago." While insect and disease damage to Aug. 1 has been light to moderate in most areas, rank growth and frequent rains hampered application of pesticides and weevil infestation was increasing rapidly in late July. "Therefore, weevil and boll rot is more a threat than for several years," USDA says.

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A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Southern states.


## Fertilizer Residue Pays

Many farmers who use but little fertilizer each year and are skeptical of its ability to make an investment pay off, frequently use as a clincher in their argument against buying, the idea that cash spent for fertilizer is just thrown away if a poor year comes around.

The dealer and his salesman can truthfully tell such a farmer-customer that such fears are practically groundless.

**One of the country's outstanding agronomists, Dr. George E. Smith of the University of Missouri, declares that "fertilizer is one farm investment that can survive bad cropping weather one year and come back the next to build high yields and profits."**

A case in point is the carry-over value of fertilizer being shown in this year's wheat crop on some Missouri farms. In some cases up to 50 bushels of wheat might be harvested on land where corn was burned out by drouth last year.

**"Even though last year's corn crop was a complete failure on some farms," he says, "the fertilizer used on it will be paid for by the increase in wheat yields this year.**

"Fertilizer is definitely not a one-year proposition. Its residual value can pay dividends for several years."

Dr. Smith's words offer a rather potent sales talk if the fertilizer dealer or salesman uses it wisely. Once a farmer catches on to the good financial returns he can derive from the generous use of plant food, the industry need not worry about his remaining an enthusiastic customer.

The tough ones are those who have to be shown, but won't allow themselves to be convinced. It takes a special amount of work to win these over, but the job is much easier when recognized authorities like Dr. Smith can be quoted so effectively.

## Automation on the Way?

Looking ahead to the logical results of the recent proposed $1 an hour minimum wage scale, one can see the possibility of considerable changing of attitudes in the fertilizer field, particularly.

**In some areas of the country where labor has been relatively cheap, labor-saving machinery has been considered too expensive to install for the numerous back-breaking jobs peculiar to the fertilizer manufacturing industry. Now, with the trend definitely toward much higher pay, not only for unskilled help but in many cases for skilled and semi-skilled workers, the feeling that machinery is too costly could easily give way to the opposite viewpoint.**

Indeed, it is likely that when the unskilled workers are boosted to a dollar an hour, their fellow employees, a little higher up the ladder, such as shovel operators and carpenters, will want similar increases to maintain the pay differential between types of jobs.

Thus, the question arises, "will fertilizer manufacturers feel the strain of a dollar minimum on all of their workers, including those now already earning more than that?"

**A number of comments by fertilizer people in the south have been heard. One voices the above thought in observing that although most fertilizer manufacturers in his state (South Carolina) pay a minimum of at least 90¢ an hour, semi-skilled workers who now make $1.25 an hour will ask for proportionate increases.**

Another manufacturer in the south says, "We're already operating on about the closest margin in any business. Many companies were in the red last year, and more will be this year." A 10% increase in labor costs would require a corresponding 10% in prices, he observes further, and adds that he is not sure just how much more farmers will be willing to pay.

Still another southern fertilizer man declares that "more mechanization may be the answer for us." The use of batch-mixing and automatic handling equipment might do the trick, he opines. "No one has tried this yet in the industry because labor hasn't been too expensive."

**So the situation will bear watching. Naturally, fertilizer plants are only a small part of the economy affected by a new minimum wage scale, but it happens that much of the industry is operating in states where wage scales are traditionally low and the fertilizer price structure has been built around this condition.**

Is automation the answer? We can't help believe it will be sooner or later. The industry is not likely to change its views over night nor will the "Georgia buggy" disappear within the next couple of months. But a change as fundamental as a higher minimum wage scale could be a sort of last straw to an industry which could well use far more automatic equipment than is now being utilized.

Modern mechanized plants utilize few men and a lot of equipment; quite the reverse of outdated ones where wage-earners are many, the production slow and the machinery practically nil.

Like the industry's plant food product which brings the user several dollars' profit for every dollar invested, modern material handling equipment is likely now to prove its worth to the fertilizer manufacturing industry.

## Agriculture and Pest Control

In a recent talk before a West Coast group, Dr. George C. Decker, Illinois Natural History Survey entomologist and president of the Entomological Society of America, painted a rather striking picture of agricultural pest control in the U.S.

We thought that his opening remarks would be of interest to men in the trade who manufacture, formulate and sell all kinds of pest control materials.

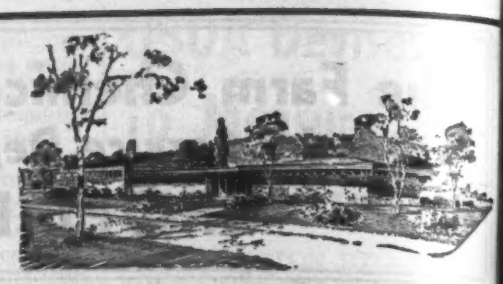
Here is what Dr. Decker had to say:

"Agriculture is generally recognized as the basic industry in our national economy, and yet we annually permit pests—insects, plant diseases, weeds, and rodents—to nullify the productive effort of over two million men, or approximately 25% of our agricultural labor force.

"The average citizen takes our American standard of living, including a bountiful food supply, more or less for granted. Rarely does he stop to reflect that if insects, plant diseases, weeds, and rodents were not controlled by cultural, chemical, or other means, they would practically eliminate all agricultural production. Those more familiar with farming practices will readily recognize that, uncontrolled, weeds alone would practically eliminate the production of most crops.

"Likewise, orchardists and gardeners know full well that the successful commercial production of fruits and vegetables would be impossible without the use of chemical sprays and other measures applied to control insects and plant diseases. Thus, pest control is not new, but rather is a sizable operation of long standing.

"Agricultural statistics reveal that American farmers now spend a quarter of a billion dollars annually for chemicals to be used in their war against agricultural pests, and an equal or even greater cost is involved in their application. To this must be added the cost of cultivating millions of acres of farm land as well as the cost of many other cultural practices applied primarily for the suppression of pests."

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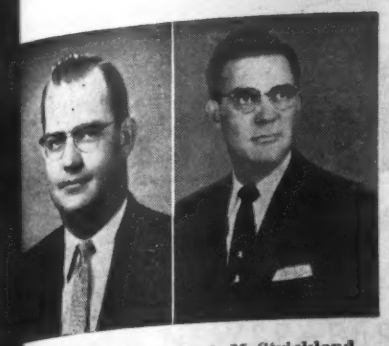

W. R. Blackburn A. M. Strickland

**APPOINTED**—The appointments of William Roy Blackburn and Alvie Martin Strickland as sales representatives in the Texas area have been announced by the Fulton Bag & Cotton Mills, Dallas, Texas, office. A graduate of Texas A&M in 1951, Mr. Blackburn has held sales positions with a large refining company. He will represent Fulton in the lower Rio Grande Valley. Mr. Strickland served in sales and supervisory capacities with companies in West Texas and New Mexico before joining Fulton.

## "Ratafin" Announced As New Rodenticide

AMBLER, PA.—American Chemical Paint Co. has just announced a new rodenticidal product, "Ratafin." The material is based on a new anticoagulant chemical, fumarin. Use of this chemical as a rodenticide was discovered after years of research for chemicals to stop blood from coagulating, the company says.

ACP reports that the chemical has been used for a number of years in foreign countries and has proved to be both effective and economical. One pound of Ratafin concentrate can kill up to 200 rats, the makers state.

**MEETING MEMOS**
See Page 19

Rats die after ingesting the material over a period of from five to 14 days. Bait shyness is not developed since the rat population does not become alarmed. The rodents continue to eat bait until they are exterminated, the company claims.

Ratafin is available to formulators in concentrated form, ACP says.

## Research Gifts to California School Listed

BERKELEY, CAL. — The Shell Chemical Corp. has given a total of $6,000 to the University of California in three separate donations, the money to be used for three studies on the use of agricultural chemicals.

Two donations, amounting to $3,000 and $2,000, were presented to the Riverside Campus of the University in southern California. They will be used, in the first instance, for studies on residue of Shell insecticides aldrin, dieldrin, endrin, and isodrin, and in the second instance for research on the effectiveness of endrin and dieldrin as soil insecticides and to evaluate them in relation to other toxicants with regard to the effect on soils, residues on agricultural crops and effects on flavor.

The remaining $1,000, to be used on the Davis campus in northern California, will be devoted to research on insect toxicants.

In addition to these three donations, the University received gifts of chemicals themselves for the continuation of various other research projects. Among the donors to studies on the Berkeley campus are Rohm and Haas Co., Atlas Powder Co., the Dow Chemical Co., and the Velsicol Corp.

The Los Angeles campus received 50 pounds of potassium metaphosphate from the Tennessee Valley Authority for use in plant soil studies, and other gifts, offered on a statewide basis, included malathion dust from American Cyanamid Co. for cyclamen mite control on strawberries, chlorobenzilate samples from Geigy Agricultural Chemicals for phytotoxic and acaricidal comparisons on greenhouse roses, and TEPP 1.0% dust from Niagara Chemical Division for aphis control on cauliflower and broccoli test plots.

### ENTOMOLOGIST NAMED

FAYETTEVILLE, ARK.—Appointment of a new instructor in the entomology department at the University of Arkansas and of a research assistant in entomology have been announced by Lippert S. Ellis, dean and director of the College of Agriculture and Home Economics. James E. Roberts, who has assumed the duties of instructor in entomology, fills the vacancy left by the resignation of L. H. Rolston April 10. He will devote full time to research work on the control of the Southwestern corn borer and other insects. Ernest P. Rouse, the new research assistant in entomology, will do research work on insect problems in stored grain.

FEED FERTILIZER
BRADLEY & BAKER


# Classified Ads

**Classified advertisements accepted until Tuesday each week for the issue of the following Monday.**

**Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of $9 per column inch.**

**All Want Ads cash with order.**

## BUSINESS OPPORTUNITIES

**FERTILIZER MIXING PLANT** — Equipped for the use and storage of nitrogen solutions—located in the best agricultural section of North Carolina. Gross sales near $200,000 annually — growing steadily and showing nice return to owner. Owner wants to sell in order to take advantage of an unusual opportunity in another section of the U.S. Will help desirable party to finance if necessary. Address 1010, Croplife, 114 East 40th St., New York 16, N. Y.

## HELP WANTED

### SALESMAN

**Leading agricultural chemical company has openings for experienced salesmen in rapidly expanding field. Exceptional opportunity for salesmen between the ages of 26 and 36. Car, traveling expenses and excellent starting salary provided. Openings available in Chicago, Dallas, St. Louis, Minneapolis and the Northwest. College agricultural training preferred. Address inquiries to Sales Manager, Agricultural Chemicals Division.**

**Pittsburgh Coke & Chemical Co.**
**Grant Bldg., Pittsburgh 19, Pa.**


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Acme Protection Equipment Co.....
Agricultural Chemicals Division, Pittsburgh Coke & Chemical Co.....
Agricultural Chemical Equipment Co.....
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Allied Chemical & Dye Corp., Nitrogen Div.....
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# A Complete Sales Medium...

**CROPLIFE** is the only *complete sales medium* directed to the agricultural chemical industry. It is a *weekly* newspaper appealing to all segments of the industry. One of its editorial functions is to knit more closely together all those industry elements—manufacturers, agents, retailers, the educational echelon and farm advisor groups. It does this by:

- Keeping all segments informed of all industry news.
- Providing feature material designed to help manufacturers and mixers to do a better job, to help dealers sell and to help farm advisors and educational people make sound recommendations.
- Keeping all industry alert to current and proposed government action.
- Providing a channel through which news and advertising can reach all segments of the industry.

This new approach to business journalism for the agricultural chemical industry is being made by a company with 80 years of experience in newsgathering and publishing and one which has built an unchallenged reputation for reliability and service. Advertising of your products and services in Croplife will mean *richer sales fields* for you!

**National Coverage Weekly . . .**

Croplife's carefully controlled circulation provides national weekly coverage of manufacturers, formulators, mixers and ingredient suppliers.

**Plus Regional Coverage by Crop-areas . . .**

In addition, a unique regional circulation plan provides advertisers with a selective crop-area coverage of wholesale and retail dealers and farm advisory personnel.

**In addition to its national coverage, Croplife offers a selective regional circulation plan in these crop-areas**

**WRITE—WIRE—PHONE** our nearest office for a complete analysis of Croplife's important role in your advertising program.

# Croplife ...for richer sales fields

New York, 114 E. 40th St.
Murray Hill 3-3768

Minneapolis, 2501 Wayzata Blvd.
Main 0575

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Harrison 7-6782

Kansas City, 612 Board of Trade Bldg.
Victor 135